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THE RECOGNITION OF A BIOLOGIC DIFFERENTIATION IN THE WHITE BLOOD CELLS

WITH ESPECIAL REFERENCE TO BLOOD TRANSFUSION *

CHARLES A. DOAN, M.D.

NEW YORK

The development of the supravital technic for the study of living blood cells in vitro [1] has made available, for the first time, a simple, adequate method for the qualitative analysis of the white blood cells. It was the attempted application of this procedure to a study of the problem of the possible relationship of the white blood cells to the unexplained reactions following the transfusion of matched red blood cells that led to the results presented briefly at this time.

During some experiments on rabbits, several years ago, in which two groups of individually matched animals were used for repeated transfusions of blood, it was noted that there was a marked difference in the clinical manifestations, following transfusion in certain recipients. A study of the peripheral blood at frequent intervals during the occasional, more severe, clinical reactions following the matched blood transfusions directed our attention to the white blood cells. Not only did the animals almost always show quantitative diminutions in the white count, but in the supravital preparations there was marked evidence of destruction of white blood cells in the greatly increased amount of cellular débris, obviously of such origin, in the blood. This condition was in sharp contrast to the findings in leukopenic states, caused by other experimental procedures, in which the decrease in the total white count is not accompanied by any evidence of increased cellular disintegration, the transitory nature of the leukopenia in many instances indicating simply a circulatory disturbance, with an accompanying redistribution phenomenon. When blood from a rabbit is given to a recipient, in which the serum agglutinates the red blood cells of the donor, a sudden convulsion, followed by immediate death, is the result, often while the blood is still being injected. On the other hand, the reactions that we have observed accompanying the evidences of the destruction of white blood cells come on within from half an hour to two hours of the transfusion, and are typical of foreign protein reactions in general. It was thought that if the recipient's serum should be found to be specifically leukotoxic in character, the disintegrating white blood cells could conceivably form the source of the foreign protein in these reactions. As a simple, practicable and quick means of determining in vitro the probable relative toxicity of specific serums to specific white blood cells, when transfusion is contemplated, the following procedure was devised and has been used for the past year and a half in both theoretical and practical determinations.

TECHNIC

First, it is essential that the slides and cover glasses for the supravital preparations be free of grease and neutral in reaction (nonacid). Glassware is placed in a saturated solution of potassium bichromate in concentrated sulphuric acid for three or four days, and then washed in running tap water for twelve hours. It is rinsed in three changes of distilled water; the slides stand over night in the last change. It is stored in 80 per cent alcohol. It is dried with clean, new gauze and flamed. If a dye is used (it is not essential), vital neutral red is recommended. Grübler's prewar, vital neutral red is made up in saturated solution in neutral absolute alcohol.[2] Twenty-five drops of the saturated solution in 5 cc. of absolute alcohol gives a nontoxic concentration of the dye for use in examinations of normal blood. The slides are flooded with the dye and then drained; they are allowed to dry in the upright position, which insures a thin, even film of the dye on the slide. A film of blood made on such a slide, when kept in the warm box at 37.5 C., will show viable cells for as long a period as a film made without the dye. Moreover, the dye makes the individual cells much more easily visible and the identification of cell types more certain. The prime requisites, it is to be remembered, however, are motility of the cells and freedom from any technical cellular depressant. The weight of the cover slip will cause the drop of blood to spread to the desired extent, provided the glassware is clean. It is sealed with petrolatum of a higher melting point than the temperature at which the examination is to be made. Either a warm box or a warm stage, preferably the former, may be used. The uniformly constant temperature conditions are an essential.

The cover slips are prepared in a similar way. They are flooded with the citrated or oxalated plasma or blood serum that has been secured for grouping the red blood cells, and drained to one corner in the vertical position, the drop of plasma that forms there being carefully removed with a fine capillary pipet. This is necessary in order that the unevenness attendant on the drying of a large drop of plasma at that point may be avoided. From the finger or ear of the person whose white blood cells are to be tested, a drop of blood is taken directly on the cover slip, prepared with the dried serum, and dropped gently on the slide. If the blood does not

* From the Thorndike Memorial Laboratory, Boston City Hospital, the Department of Medicine, Harvard Medical School, and the Laboratories of the Rockefeller Institute for Medical Research, New York.

1. Sabin, F. R.: Studies of Living Human Blood Cells, Bull. Johns Hopkins Hosp. 34: 277-288 (Sept.) 1923.

2. Most of the domestic dyes at present are too toxic, even in high dilution, for supravital staining of living cells.

promptly spread into a thin, even film, slight manipulation from the side, never a pressure from above, may be used. Immediately, on the same slide, and from the same or a subsequent drop of blood, the control film is made with a plain cover slip. Both are sealed with petrolatum, and, under proper temperature conditions, the control slip is looked at first, to make certain of the viability of the leukocytes. It is the comparison or contrast between the number of viable cells in the two preparations on which depends the determination of the compatibility of the plasma in question. Oxalate and citrate anticoagulants in themselves do not affect the white blood cells in this test. However, as will be seen from table 1, when a blood is leukotoxic, citrated or oxalated plasma is doubly destructive to the susceptible white cells. At certain times there are physiologic showers of the "nonmotile" leukocytes, described by Sabin and her co-workers [3] in 1925, which must be differentiated from the white cells specifically affected by the incompatible blood plasma. Both by the difference in physical characteristics and by their presence and number in the control film, it is readily possible to eliminate such preparations as pseudopositives. If the control film, at any time, contains a high percentage of the "nonmotile" leukocytes, it is advisable to make a second duplicate preparation, as this particular phase of the polymorphonuclear leukocyte is transitory and does not reflect the plasma effect so readily as does the actively motile form.

TABLE 1.—*Quantitative Data on the Disintegrative Effect of Incompatible Serums on Susceptible White Blood Cells in Vitro Over a Twenty-Four Hour Period* *

Time	Conditions	W. B. C.	Time	Conditions	W. B. C.	Time	Conditions	W. B. C.
11/17/25			11/19/25			11/19/25		
1:45	Control	6,000	2:30	Control	6,500	10:00	Control	6,200
	W. B. C. + serum	6,800		W. B. C. + serum	6,000		W. B. C. + serum	6,100
2:15	W. B. C. + serum	6,700	3:30	W. B. C. + serum	5,100	11:30	W. B. C. + serum	6,100
3:00	W. B. C. + serum	5,200	4:30	W. B. C. + serum	4,500	2:00	W. B. C. + serum	4,300
4:45	W. B. C. + serum	3,600	5:30	W. B. C. + serum	4,100	3:30	W. B. C. + serum	3,600
	Control	6,650		Control	6,200	4:30	W. B. C. + serum	3,300
11/18/25			11/20/25			5:30	W. B. C. + serum	2,700
1:00	Control	6,900	2:00	Control	5,500		Control	6,200
	W. B. C. + serum	1,400		W. B. C. + serum	3,800	11/20/25		
						10:00	Control	6,500
							W. B. C. + serum	2,500

* In cases in which no qualitative changes were noted in supravital studies, the total counts of controls with acetic acid only and of the cells exposed to serums ran parallel over corresponding twenty-four hour periods.

Sabin and her co-workers [3] in 1925, which must be differentiated from the white cells specifically affected by the incompatible blood plasma. Both by the difference in physical characteristics and by their presence and number in the control film, it is readily possible to eliminate such preparations as pseudopositives. If the control film, at any time, contains a high percentage of the "nonmotile" leukocytes, it is advisable to make a second duplicate preparation, as this particular phase of the polymorphonuclear leukocyte is transitory and does not reflect the plasma effect so readily as does the actively motile form.

SPECIFIC LEUKOTOXINS IN HUMAN BLOOD PLASMA

As in the case of the red blood cells, so with the white blood cells, certain serums have a much more decided and rapid agglutinative effect on the red cells, or a disintegrative effect on the leukocytes, than others. When the bloods are compatible for leukocytes, all the different types of white cells are as motile as in their own plasma. In the majority of instances, when the white blood cells of one person are affected by the dried plasma of another individual, the effect is immediate and unmistakable; i. e., as soon as the preparation can be placed under the microscope, there is no doubt of the serious depression in activity of the leukocytes; many may be rounded up or fixed in the act of motile elongation or irregular, pseudopod formation; others, with increasingly sluggish movements, indicate their susceptibility and gradual yielding to some foreign depressant. It is not unusual to find all the leukocytes rounded up and shrunken, with irregular edges, as if becoming dehydrated. In the majority of instances, just preceding, accompanying or soon following this rounding up of the polymorphonuclear cells, with com-

TABLE 2.—*Five Different Series of Observations Representative of the Direct Relationship*

	Serum T 1 vs. Cells T 2 Nov. 29, 1924—10:00					Serum T 2 vs. Cells T 12 Nov. 30, 1924—10:00					
Concentration of serum	Control	100% Sodium Citrate Plasma	100% Serum	50% Serum	10% Serum	Control	100% Sodium Citrate Plasma	100% Serum	50% Serum	10% Serum	Control
Polymorphonuclears, active	90	6	86	55	58	78	4	25	45	74	78
round	0	74	88	25	16	0	75	57	23	2	0
vacuolated	0	3	9	7	4	0	4	4	2	6	0
old	0	0	0	0	0	0	0	0	0	0	0
nonmotile	1	2	1	0	8	5	1	1	6	0	1
Polymorphonuclear basophils	0	0	0	0	0	0	0	0	0	0	0
Polymorphonuclear eosinophils	1	0	0	1	4	0	2	0	0	1	1
Myelocytes	0	1	1	1	0	0	0	0	0	0	0
Total myeloid	92	86	85	89	90	83	86	87	76	83	80
Lymphocytes, small	6	4	13	10	6	7	11	10	13	3	8
intermediate	1	0	1	1	0	6	0	2	4	10	8
large	0	0	0	0	0	2	1	0	2	0	2
Total motile	5	0	0	0	1	9	0	0	0	4	10
Total lymphoid	7	14	14	11	6	15	12	12	19	13	18
Monocytes, active	1	0	0	0	4	1	0	0	0	4	2
young	0	0	0	0	0	0	0	0	0	0	0
round, inactive	0	0	1	0	0	0	2	1	5	0	0
Total monocytes	1	0	1	0	4	1	2	1	5	4	2

* In the first two instances it will be seen that sodium citrate increases the effect of an already foreign serum, while the last case, in which there the fourth series of observations may be noted. In making the practical clinical test it is, of course, necessary only to make observations on two

3. Sabin, Florence R.; Cunningham, R. S.; Doan, C. A., and Kindwall, J. A.: The Normal Rhythm of the White Blood Cells, Bull. Johns Hopkins Hosp. 37: 14-67 (July) 1925.

plete cessation of all motility, appear vacuoles of increasing number and size, staining with the neutral red. These are probably vacuoles of degeneration and mark a further stage in the process of disintegration. In table 2 it will be seen that in one case cited (serum T 4 vs. cells T 6) the number of vacuolated cells, on immediate observation, was large. A nucleus with scattered granules, evidencing a ruptured membrane, gradually becomes a more frequent finding in such a film on standing. This indicates not only that the motility of the leukocytes is inhibited, but also that there are eventual cell rupture and disintegration, as the end-result of the exposure to these leukotoxic serums.

It is not only the polymorphonuclear leukocytes that are visibly affected by the occasional incompatible plasma. The lymphocytes lose all motility and perhaps are the first to show the effect of an unfavorable environment. We recognize in normal blood films three rather distinct sizes of lymphocytes, which have been separated, for convenience, into the small, the intermediate and the large. Many of the small, most of the intermediate, and only an occasional large lymphocyte show active motility. The type of movement of the leukocyte is that in which there is a marked forward streaming of the cytoplasm, as the pseudopodia advance, while the nucleus seems to be passively dragged along in the rear of the cell. In contradistinction to this pseudopodia-like motility of the cytoplasm of the polymorphonuclear cells, the lymphocytes move with the nucleus in the front end of the cell, seeming to be as actively involved in the motility as the cytoplasm itself. The nuclei show constant, inherent changes in shape as the cell advances, the cytoplasm following along to the rear. In our preparations the first, and in some instances the only, thing to be seen for some time is a rounding up of all lymphocytic nuclei and a shrinking of the whole cell, so that all appear as static small lymphocytes. However, the lymphocytes seem much more resistant to the disintegrative phase later.

The monocytes assume all manner of bizarre shapes, again suggestive of dehydration of the cytoplasm. They appear crumpled, fluted, with the centrosphere the focus or center of the peculiar, cracking cytoplasm. All motility is, of course, gone.

The leukotoxic effect of specific serums does not parallel the agglutinative phenomenon, as seen in the red blood cells. In every instance we have ascertained the red cell grouping of the individuals by hanging drop preparations. The dried serum of the cover slip preparations also causes agglutination of the red blood cells in the instances in which the groupings are incompatible. It is striking to see complete clumping of the red cells, with the white blood cells in the clear interspaces as actively motile as in the control, in which the red cells are evenly distributed. Conversely, it is just as striking to find no effect on the distribution of the red cells in a vital film, and yet to observe all the white blood cells inactive and undergoing the disintegrative changes already described.

As an in vitro quantitative check on the apparent qualitative changes leading to disintegration of the white blood cells, already observed, susceptible blood cells were diluted with serum in a series of white cell counting pipets. Counts were made at successive intervals, contrasting with controls diluted only with acetic acid in the usual way. Table 1 indicates the quantitative differences that were found. It will be remembered that quantitative changes in vivo had been observed and recorded in the earlier transfusion reactions.

In one instance, an original total white blood cell count of about 7,000 had decreased 20 per cent the first hour and a quarter, approximately 50 per cent after three hours, and 80 per cent after twenty-four hours. In another case with 6,000 total white blood cells originally, after four hours 20 per cent, after five and one-half hours 42 per cent, and after twenty-four hours 60 per cent had disappeared. These observations were made at room temperature, and under conditions presumably not so favorable for the full toxic effect of plasma on transfused leukocytes as would avail within the body. The cells resisting disintegration longest were lymphocytes, although obviously affected qualitatively.

In order to determine whether we were dealing with a particular leukotoxic substance of definite concentration in the serums that seemed to produce these effects on foreign white cells, various dilutions of the concentrated serum were made, and a series of consecutive

of the Concentration of Incompatible Serums to the Extent of the Qualitative Cell Injury *

Serum T 3 vs. Cells T 2 Nov. 20, 1924—9:00						Serum T 4 vs. Cells T 6 Nov. 24, 1924—1:10						Serum T 1 vs. Cells T 17 Dec. 11, 1924—10:30				
Control	100% Serum	50% Serum	25% Serum	10% Serum	5% Serum	Control	100% Serum	50% Serum	25% Serum	10% Serum	5% Serum	Control	100% Serum	50% Serum	10% Serum	100% Sodium Citrate Plasma
80	14	14	44	52	55	78	37	25	23	33	38	58	58	60	52	56
0	56	53	35	25	24	0	13	2	12	1	0	0	0	0	0	0
0	0	0	0	0	0	0	24	46	35	33	29	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	13	15	0	0	5	2	0	1	0	0	1	0	0	0	0	0
0	0	0	1	0	0	1	0	1	5	3	5	6	0	0	2	0
1	1	1	1	2	2	5	9	2	8	5	11	8	8	8	10	9
7	2	5	6	5	1	0	0	0	0	0	0	0	0	0	0	0
88	86	88	87	84	87	86	83	77	78	75	74	72	66	68	64	65
3	6	9	6	11	8	5	10	13	13	13	5	16	24	20	28	21
5	3	2	2	3	2	5	5	6	5	7	3	8	6	10	8	10
2	1	1	0	0	0	0	1	0	1	1	2	2	2	2	0	1
6	0	0	0	3	3	6	0	0	0	2	5	10	9	13	12	12
10	10	12	8	14	10	10	16	19	19	21	10	26	32	32	36	32
2	0	0	0	1	1	4	0	0	0	0	2	2	2	0	0	2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	4	0	5	1	2	0	1	4	3	4	4	0	0	0	0	0
2	4	0	5	2	3	4	1	4	3	4	6	2	2	0	0	3

is no incompatibility, shows no inherent anticoagulant effect. The large percentage of vacuolated, disintegrating polymorphonuclear neutrophils in preparations, the control and the undiluted serum or plasma, dependent on whether the transfusion is to be direct or indirect.

drops of blood was taken at the same time and exposed, first, to the undiluted, dried serum, and then to the same serum at 75, 50, 25 and 10 per cent of the original strength. Table 2 indicates that the leukotoxic effect is directly proportional to the concentration of the foreign serum, but that anticoagulants increase the degree of injury to already susceptible cells. This probably means that greater importance will attach to the state of compatibility of the serum of the recipient than to that of the donor, just as group IV in the red cell classification (Moss) is used as a universal donor, even though the serum contains agglutinins against the other cell groups.

This leukotoxic property of certain bloods is thermolabile. Heating for one hour at 60 C. in a water bath inactivates the plasma approximately 90 per cent, in comparing with the control and contrasting with the fresh, unheated serum.

We have now kept serum dried on cover slips for one year, and when contrasted in its effect with the fresh serum of the same individual, the former has been found to have lost about 90 per cent of its original effectiveness. The serum in sealed ampules deteriorates likewise. Thus, fresh serum is desirable and necessary in making tests for compatibility for transfusion.

Ross,[4] in 1911, discussed the relationship of the blood plasma to the length of life of the white blood cells in different individuals in both health and disease. He determined the length of life of a healthy person's leukocytes, when resting in their own plasma, to be between twenty-four and eighty-six hours. In the case of a healthy person's leukocytes versus another healthy person's plasma, the length of life was found to be between fourteen and twenty-eight hours. He concluded that "the plasma of one person is poisonous to another person's leukocytes." The present observations, however, tend to differentiate and group individuals on the basis of whether their leukocytes are susceptible to foreign plasma or not.

Thus, the effort has been made to determine the classification of individuals with reference to the white blood cells on some such basis as is recognized for the red cells. This has not been so easy, however, as it was in the earlier grouping of the red blood cells. At the one extreme, in the present series of forty persons are to be found about 40 per cent whose serum or white blood cells seem to be mutually compatible with all others. At the other extreme are 5 per cent whose white blood cells seem to be susceptible to all serums, or to practically all serums to which they have been exposed. Between these two extremes there appears a variety of reactions which can be explained only on the hypothetic presence of at least three different leukotoxic components in the cells, with their complements in like number variously distributed in the serums. On this hypothesis there would be twenty-seven combinations biologically possible, as recognized by Guthrie and Huck for the red cells. However, the frequent occurrence of a larger number of these possibilities with the white blood cells than with the red cells is indicated by our observations. We have found examples of nine different combinations in the remaining 55 per cent of our forty subjects. However, to attempt to assign arbitrary group designations to each would tend at this time only to complicate and confuse rather than to simplify and clarify the application of the principle.

As a consequence of this larger number of possible combinations, occurring regularly, and because of the necessity of using fresh serums for determining the compatibility, it is not practical to determine the group of each donor and recipient. Rather, we would suggest the direct cross matching of the white cells and serum of donor and recipient after the red cell grouping has been determined. With professional donors, it would soon become evident whether they fell into the general group of universal donors (A) or into the universally leukotoxic class (Z). It would seem, on the basis of the observations to date, therefore, that direct cross matching of the white blood cells, immediately prior to transfusion, is desirable and advisable as a further aid in avoiding the possibility of an unpleasant or conceivably fatal reaction. It is well recognized now that, for safety, direct cross matching of the red blood cells is desirable, in addition to a knowledge of compatible groupings.

4. Ross, H. C.: Induced Cell Reproduction and Cancer, 1911.

HUMAN BLOOD TRANSFUSIONS

Guthrie and Huck,[5] in a review of the subject of the reactions following transfusion in relation to their recent survey of the existence of more than four iso-agglutinin groups of red blood cells, remark:

> The really serious reactions, although more uncommon, are of much greater importance. Those which concern us chiefly at the moment are such as may reasonably be attributed to incompatibility, as reckoned by the standard of iso-agglutination. Before passing to this aspect of the question, however, we wish to call attention to another phase which is usually overlooked. Most of us have a tendency to view transfusion as a ready means of correcting a deficiency in red blood cells, and so regard the material, administered intravenously, merely as a suspension of red cells, habitually disregarding the other ingredients, or at least minimizing their importance. We rarely consider the fact that the patient receives plasma, leukocytes, and more or less damaged platelets, in addition to the needed red cells. Concerning the effect of the leukocytes, not much evidence is available, but it has been shown that the platelet fraction may possess some toxicity.

In the final analysis, the real proving of the in vitro evidence for white blood cell incompatibility lies in its application to the therapeutic procedure of blood transfusion, under as carefully controlled conditions as it is possible to secure. The ideal test is, of course, that in which repeated transfusions are given to the same recipient, the consecutive donors differing only in their white blood cell compatibility, the technic of procedure in the transfusion being the same in all instances.

During the past year we have followed the cases of transfusion in the Thorndike and Fourth Medical services of the Boston City Hospital with reference to the procedures outlined above. In three instances we had opportunity to give to the same recipients repeated transfusions over a period of weeks. In one case, each of two transfusions was given from donors with both red and white blood cell compatibility in in vitro tests, and without any reaction. We have considered, singly or collectively, a rise of 2 degrees in temperature, with chilling and subjective discomfort, and marked white blood cell fluctuations, as constituting a reaction. In two instances, two transfusions were given at ten day intervals, the first donors being in each case incompatible only as to the white blood cells from in vitro tests. Severe reactions followed, one proving almost fatal. The second donors in each instance were both compatible as to red and white blood cells, with neither recipient showing the slightest reaction. All trans-

5. Guthrie, C. G., and Huck, J. G.: On the Existence of More Than Four Iso Agglutinin Groups in Human Blood, Bull. Johns Hopkins Hosp. 34: 37 (Feb.), 80 (March), 128 (April) 1923.

fusions in the cases just cited were indirect, with citrated blood, and were given personally or with every possible detail personally checked. In a small series of ten single, indirect transfusions, seven cases in which there was compatibility of both red and white blood cells with in vitro tests showed no reactions. In two instances in which there was incompatibility only in the white blood cells, according to the preliminary tests, reactions occurred. In one case in which the white cells showed complete compatibility between donor and recipient, we observed a severe reaction. This individual proved, eventually, to be of an atypical group II in the red blood cell grouping, and ten different donors were tried before finally one could be secured with whose red blood cells there was not agglutination in vitro. In this instance, it is an open question as to what the cause of the reaction may have been, though from tests both before and after transfusion, the white blood cells of both donor and recipient were entirely compatible.

Minot and Isaacs [6] recently reported an interesting case from the Huntington Memorial Hospital, Boston. They arranged to transfuse 500 cc. of blood from a patient with chronic lymphatic leukemia into a recipient with lymphosarcoma. We were invited to follow the case with supravital studies. In vitro tests showed the white blood cells of donor and recipient to be entirely compatible. Both were of group IV (Moss) red blood cells. The donor had a white blood count of 89,000 just prior to transfusion, of which 95.6 per cent, or 85,200, were lymphocytes. The recipient had 6,400 white blood cells per cubic millimeter, only 992 of which were lymphocytes. Immediately following the direct transfusion of 500 cc. of blood, the recipient showed 8,800 white cells per cubic millimeter, with 3,740 lymphocytes; one hour later, 5,600 cells with 1,428 lymphocytes, and two hours and fifteen minutes after the transfusion, 6,200 cells, with 961 lymphocytes. Nor was there, at any time, evidence of any reaction. Furthermore, there was no evidence of cellular disintegration in the supravital studies made all that day. We have here a case in which there was a rapid elimination, from the peripheral blood, of lymphocytes, but without observable disintegration and without reaction, a striking contrast to the disintegrative phenomena which we have observed coincident with certain reactions.

There are too many different factors entering into each transfusion of blood to attribute to any one of them the full responsibility for unfortunate and sometimes dangerous reactions. Also, it is too difficult to control all the variables in technic and in chemical and cellular constituents of the individual donor's blood to assure a complete elimination of danger. But, as we learn to eliminate one by one the possible sources of error, particularly in application to those cases of dangerously weakened patients in which successful transfusion may mean life, but even a mild reaction death, the responsibility lies with the one who does not make use of every available safeguard.

The possible application of a recognition of this biologic incompatibility of the white cells in certain human bloods to the development of hypersensitiveness after repeated transfusions, to skin grafting and to other procedures is suggestive.

SUMMARY

1. There seems to be a definite incompatibility between the blood plasma of certain individuals and the white blood cells of others, as shown by simple in vitro tests.

2. A definite biologic classification of individuals according to white cell compatibility is difficult, because of the fact that at least twenty-seven different combinations are possible, many of them not infrequent. Approximately 40 per cent of the group of forty persons investigated may be considered universal donors (group A); 5 per cent seem to have cells susceptible to all, or nearly all, plasma (group Z); nine different combinations are represented in the remaining 55 per cent, to which no arbitrary group designation has been assigned at this time.

3. The added precaution of ascertaining the relative compatibility of plasma and white cells by direct matching, preliminary to transfusion, particularly in cases in which extreme weakness makes imperative a successful operation, is advisable.

Sixty-Sixth Street and Avenue A.

6. Minot, G. R., and Isaacs, Raphael: Transmission of Lymphocytes: Their Rapid Disappearance from the Peripheral Circulation of Man, J. A. M. A. 84: 1713-1715 (June 6) 1925.

PNEUMATIC RUPTURE OF THE SIGMOID

REPORT OF CASE

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The subject under consideration is that type of injury of the lower part of the large intestine which is caused by trauma resulting from the careless use of compressed air. The first complete review of this relatively rare injury was published by Andrews [1] in 1911, in which he reported a case with operation and recovery together with a collection of fifteen additional unpublished cases.

REPORT OF CASE

A man, aged 45, a machinist, admitted to the Jewish Hospital, Dec. 14, 1925, at 4 p. m., had been injured about two hours before. While standing at work with a compressed air hose, one of his fellow workers, as a practical joke, placed the nozzle of the air hose about an inch from his rectum. The patient had his clothes on and states that the nozzle, which was about one-fourth inch in diameter applying a pressure of about 125 pounds, was placed diagonally against the anus. He immediately became dizzy, staggered, and fell to the floor unconscious. When he became conscious, about twenty minutes later, he walked with assistance to a first aid station about a block away. During this walk he complained only of having a sensation of being blown up. He did not vomit or feel nauseated, but had difficulty in catching his breath. At the first aid station the physician applied hot compresses to the abdomen, but he obtained no relief and was then brought to the hospital. Examination in the receiving ward showed that the patient was somewhat cyanosed, and his respirations were slightly increased, being mostly of the thoracic type. The heart sounds were scarcely audible. The temperature was 94 F.; pulse, 76, and respirations, 28. The abdomen was enormously distended, it was tympanitic all over, and the skin was very tense. A rectal tube was inserted without any effect on the condition. The patient stated that he had not passed any flatus since the accident, nor had there been any discharge of blood from the rectum. There was no peristalsis audible. About 5:30 p. m. he began to complain of abdominal pain for the first time. The abdomen became more tense and the cyanosis deepened. As there was not the slightest improvement in his condition, operation was decided on and was begun at 7:30 p. m., five and one-half hours after the accident.

1. Andrews, E. W.: Surg. Gynec. Obst. 12: 63 (Jan.) 1911.

When the peritoneal cavity was opened there was a rush of air with a whistling sound, and coincidently the abdominal tension entirely disappeared. The intestines were moderately injected, and there was a small amount of thick bloody fluid in the peritoneal cavity. The patient was placed in the Trendelenburg position and the pelvic portion of the bowel was exposed. Slightly above the junction of the sigmoid, with the rectum on the left side, there was an irregular perforation of the bowel with a diameter of about 25 mm., together with a laceration of the mesosigmoid about 2 inches (50 mm.) long. Through this opening fecal material was escaping into the peritoneal cavity. In addition to this, there were four longitudinal lacerations on the lower sigmoid and upper rectum involving the muscular coats of the bowel but not extending into the lumen. These lacerations, together with the perforation, were sutured with catgut and then reinforced with Pagenstecher-Lembert sutures. A jejunostomy was made as a prophylactic measure, and the abdomen closed with a rubber drainage tube in the pelvis. The patient was returned to bed and placed in the extreme Fowler position and given continuous hypodermoclysis of physiologic sodium chloride solution containing 1 drachm (4 cc.) of 0.5 per cent procaine to each thousand cubic centimeters of the solution. Morphine sulphate, one-sixth grain (11 mg.), was given by hypodermic injection every four hours, while the respirations remained above 20 per minute. Nothing was given by mouth until the second day, when he was allowed to have water freely and the hypodermoclysis was then stopped. The patient was given a semisoft diet on the fifth day, a soft diet on the ninth day, and a light diet on the thirteenth day. The enterostomy tube was out on the eighth day; the drainage tube was completely removed on the thirteenth day, and the patient was then allowed out of bed. Up to this time his temperature never rose above 101 F.; the pulse remained below 110 and the respirations below 30 a minute. Jan. 8, 1926, the patient developed some pain in the right testis, the temperature rose to 103, and the pulse increased to 115 a minute. A diagnosis was made of a right epididymitis secondary to a cystitis resulting from catheterization. The temperature was septic until January 17, when the patient's condition again became normal. January 20, he was about to be discharged from the hospital when he began to complain of pain in the upper abdomen and vomited. This continued without relief from gastric lavage, and the following day the temperature dropped to 97 F., the pulse increased to 112, and a diagnosis of acute intestinal obstruction was made and a second operation performed; this revealed the small intestine strangulated by three bands at the site of the wounds in the large intestine. These bands were ligated and divided, and the abdomen was closed without drainage. Convalescence following this operation was entirely normal, and the patient was discharged from the hospital in good condition, February 7, fifty-five days after admission.

DESTRUCTIVE FORCE OF COMPRESSED AIR

In analyzing the subject of pneumatic rupture of the bowel, we note that the majority of the cases were caused by the so-called practical joker, a man who plays pranks on his fellow workers with an air hose, and a few cases were caused accidentally by men cleaning their clothes with the air hose. It is evident that this practical joking must be common, especially with the ever increasing use of air under pressure in our modern industries for drills, riveters, cleaning of cars, machines and barrels, and probably many more trifling or minor accidents have occurred which are not reported. In all the cases cited the air had to pass through one or more layers of cloth to enter the anus, yet this obstruction did not seem to interfere with its serious effect. In several of Andrews' cases and in some of these of Bendixen and Blything,[2] as in our own, it will be noted that the compressed air nozzle was at least an inch or more from the body. Why is it, then, that we have such a destructive force in the application of compressed air? Andrews' explanation is more than convincing: First, from 100 to 125 pounds of air will form a solid column of air several inches in advance of the hose or nozzle which would almost act like a solid body, forcing open the sphincter muscles. Secondly, the anatomic arrangement of the perineum is such as to facilitate the concentration of the air pressure at the anal orifice. This anatomic condition is a peculiar formation of the pelvic floor, forming a funnel, whose apex is at the anus; the confined air, expanding in this funnel, will force the anus open without having the end of the pipe accurately adjusted to the anus. With the involuntary contractions of the levator and sphincter muscles, the space between the buttocks would be narrowed and the funnel deepened, thus confining the escaping air laterally and leading it the more quickly into the bowel. Thirdly, Andrews has shown by experimental work that it took only from 7 to 12½ pounds of pressure to rupture a piece of human intestine.

With the exception of one or two cases reported with bruises around the anus, the majority of cases revealed pathologic lesions intra-abdominally consisting of hemorrhage in the serosa, lacerations of the serosa and muscular coat with bulging of the mucous membrane, or complete rupture of the bowel through the serosa, muscular coat and mucous membrane as in our case. In nearly all cases the sigmoid was affected. The descending transverse or ascending colon, together with the small intestine and mesentery, may show signs of injury.

Pain was the first symptom complained of in the majority of cases, although in ours and a few other cases it did not come on until a few hours after the accident. The pain is severe and continuous in character. The face is usually sallow and somewhat cyanotic, the facial expression anxious and pinched. The abdomen is enormously distended, the skin very tense, the percussion note tympanitic, very little if any abdominal breathing caused by the pressure of the air against the diaphragm, and the patient may or may not be conscious. The temperature is usually normal or subnormal at the beginning, and later rises. The respirations are increased; the pulse rate increases somewhat, but its volume varies in the proportion to the amount of internal hemorrhage and degree of shock; nausea and vomiting are commonly present. Rectal hemorrhage is usually absent.

With the history of working around air under pressure, with the characteristic barrel shaped abdomen with its tense wall and tympanitic note, the thoracic breathing and the general symptoms of an abdominal injury, the diagnosis should not be overlooked.

Of the twenty-seven cases of which we were able to collect reports, sixteen reported by Andrews, seven by Bendixen and Blything, one by Buchbinder,[3] our own case, and two additional unpublished cases that occurred in industrial plants in Philadelphia, the mortality was 70.3 per cent. Twelve of these patients were not operated on, with a mortality of 75 per cent. The mortality of the patients operated on was about 47 per cent.

SUMMARY AND CONCLUSIONS

1. Warning should be posted in all industries using compressed air.

2. Bendixen, T. A., and Blything, J. D.: Surg. Gynec. Obst. **18**: 73 (Jan.) 1914.

3. Buchbinder, J. R.: Pneumatic Rupture of the Intestine, J. A. M. A. **76**: 518 (Feb. 19) 1921.

2. A column of air under pressure rushing from a nozzle which does not touch the body may enter the bowel and cause fatal injury.

3. The diagnosis should easily be made from the physical findings.

4. The anus and rectum escape injury because of their outside support, the sigmoid being the viscus usually injured.

5. Prompt evacuation of the air by emergency puncture and early laparatomy offer the best chance of recovery.

Medical Arts Building—931 Roosevelt Boulevard.

SOME MISCONCEPTIONS REGARDING THE RELATION OF HEREDITY TO CANCER AND OTHER DISEASES

STUDIES IN THE INCIDENCE AND INHERITABILITY OF SPONTANEOUS CANCER IN MICE: TWENTY-THIRD REPORT *

MAUD SLYE

CHICAGO

A very serious handicap is met in the effort to make known the facts of heredity and to place these facts in their proper relation to other biologic data, for the purpose of establishing the exact value of heredity among the biologic influences, so that we may have a firm basis for further departure, and not be forced continually to replow the same ground. This is particularly true in attempting to establish the relation of heredity to disease.

This serious handicap consists in what may well be called fundamentalism in the scientific field; that is, preconceived ideas and prejudices, not based on scientific research, but instead on general impression, hearsay evidence and the like, handed on from one to another and thus established in general opinion.

Scientific terms, frequently misunderstood and misused by clinicians and research workers, form a strong background of entrenchment to prejudice and preconceived opinion. One of these terms is "eugenics," which has been used to mean anything from personal and social hygiene, and childbirth conditions, prenatal and postnatal, through to the real facts of heredity. These widely divergent usages of the word eugenics have led to a rather widespread confusion among terms as different in meaning as sanitary, congenital and hereditary.

Personal and social hygiene have much to do with good birth, and they do determine those conditions which are congenital. They can in no way determine hereditary characters. They may influence the extent to which hereditary characters can develop, just as conditions of wholly external origin, such as lack of food or lack of sunshine can determine after birth how far certain hereditary characters can develop.

A congenital disease is contracted in utero. Any disease that is hereditary is not so contracted, but instead is the result of characters derived from ancestral germ plasm, inherent in the ovum and in the sperm cell. By the right line of experimentation, hereditary diseases can be proved not to have been contracted in utero.

This word "congenital" is another of the much misused terms. I am quoting from remarks made at a scientific meeting in a paper whose object was the establishment of one of the "cancer germs" somewhat recently discovered. "The fact that cancer is hereditary has nothing to do with whether or not it is an infection, as we all know that syphilis is hereditary, and syphilis is a specific infection." Such confusion between "congenital" and "hereditary" is not infrequent, and it is destructive of any correct understanding of heredity and the bearing on the etiology of disease which any given type of true inheritance behavior may have.

Intra-uterine influences determine what shall be congenital. Such influences do not determine characters that are hereditary, as these, having been laid down in ancestral germ plasm, can be carried through many generations before their frank emergence. As I have stated in a previous paper,[1] such hereditary recessive characters as the tendency to albinism, the tendency to cancer, and the tendency to the dancing habit shown in the Japanese waltzing mouse, have repeatedly been held back in this laboratory for over twenty-five generations. Submerged beneath a dominant character, they are carried along through generation after generation by hybrid carriers wearing the dominant appearance, but they are always potential in the strain as long as hybrid carriers are bred with the dominant. When eventually two of these hybrid carriers are mated, the next generation will frankly show, in some of the offspring, this recessive character (albinism, cancer, the dancing habit, etc.) which has been submerged in hybrid carriers for any number of generations desired. Such behavior of any character takes it wholly outside the realm of the congenital and places it indisputably among the characters that are hereditary. This test of whether or not a character can be transmitted through generation after generation without its frank emergence should always be made in the study of the inheritability of any recessive character, in order to be certain that it is truly hereditary and not congenital.

STATISTICS

The question of the inheritability of disease types seems to be of interest both to the medical and to the lay mind. In view of this long continued and very general interest, it is striking how few adequate studies have been attempted in the question of the relation of heredity to any pathologic condition.

In the absence of such studies, it is equally striking how generally an "opinion" is held on the subject of heredity, when the question is raised in connection with any given type of disease. There seems also to be a strong desire to think that diseases have no hereditary basis, and a readiness to accept the opinion that any given disease is not hereditary without any adequate data whatever, whereas the most incontrovertible evidence that any disease is hereditary does not carry conviction to such minds.

For example, at the symposium on rickets held at the 1924 session of the American Medical Association, the unanimous pronouncement was made that rickets is not hereditary "in the true sense" (whatever that expression may mean), and an editorial accepting this pronouncement and rejoicing in it shortly followed in THE JOURNAL.

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* Read before the American Society for Cancer Research, Albany, N. Y., April 1, 1926.

* From the Cancer Laboratory of the Otho S. A. Sprague Memorial Institute and the University of Chicago.

1. Slye, Maud: J. Cancer Research, April, 1926.

This pronouncement was not the outcome of adequate heredity studies of rickets, but of the opinion of the speakers at the symposium, based presumably on dearth of direct evidence of inheritability in the particular rickets subjects handled in their service.

This illustration is typical of the method commonly in vogue in handling questions of heredity in relation to disease. I desire strongly to reemphasize the misleading nature of such extempore "opinions" on the subject of heredity, since heredity is a most profoundly determining factor in the nature and behavior of any disease, and pronouncements on the subject should be based only on intensive heredity studies.

Thus, the most serious of the obstacles in establishing the facts and influence of heredity is the very general misconception of the nature of heredity itself, and of the type of test that is adequate to prove the inheritability or noninheritability of any disease. One of the fundamentalist views concerning heredity is that if we study the two parents we have canvassed the field. It is therefore a matter of surprise to those who hold this point of view, when two black parent mice have white offspring; or two brown-eyed human parents have blue-eyed children, or two human or mouse parents without cancer have cancerous offspring. To be consistent in these cases would be to decide that black hair is not inheritable and that brown eye-color is not inheritable, since it is on such a basis that such investigators decide that cancer is not hereditary. Positive conclusions regarding heredity are frequently based on information concerning the parents only. Not infrequently, scientific investigators announce the inheritability of a disease on so inconclusive a test as mating two individuals with the same disease and finding that the immediate offspring also have the disease.

Some better informed statisticians would take the record not only of the two parents but also of the four grandparents, and with entire conviction they base their conclusions concerning heredity on these data. But it is easily possible, in heredity, that there should appear

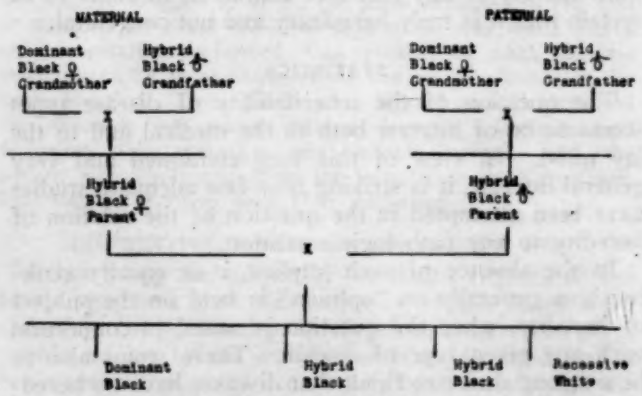

Fig. 1.—How albinos can be derived by the classic method, when neither parent nor any one of the four grandparents was albino.

in the third generation a character shown by neither parent nor any one of the four grandparents, as shown in the accompanying diagrams.

As shown in figure 1, pigmentation is dominant over the lack of pigmentation (albinism). If, therefore, we mate two black mice, one of which is hybrid black (that is, carries albinism potentially) and the other purebreeding black, we shall get only black mice in their immediate offspring. One half of these will be purebreeding black, and one half will be hybrid black, and nothing in their external appearance indicates which are dominant black and which are hybrid black. If then we select for both parents of the next generation hybrid black individuals from such a cross, we shall get some albino mice in the immediate offspring.

Here, then, are albino mice readily obtained from ancestry which showed no white in either parent or any one of the four grandparents. By mating two of these whites, we shall immediately get a 100 per cent albino strain, which will remain 100 per cent albino, unless pigmentation is again hybridized in. Thus, by one mating of two recessive albinos derived from hybrid

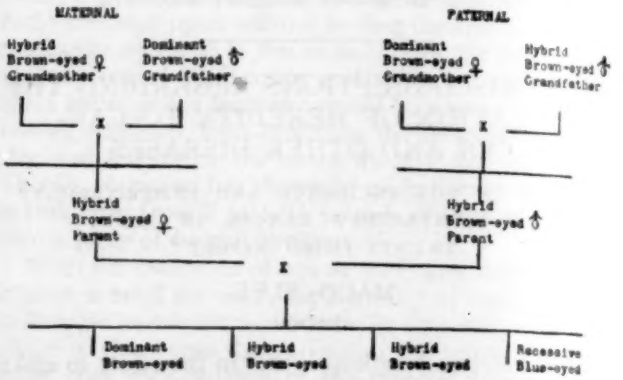

Fig. 2.—How blue-eyed individuals are readily obtained when neither parent, nor any one of the four grandparents, was blue-eyed.

black is a strain, which had apparently been 100 per cent black, immediately converted in this branch into 100 per cent white.

As shown in figure 2, again, brown eye-color is dominant over blue eye-color. If we select as grandparents one purebreeding brown-eyed and one hybrid brown-eyed individual for each pair, one half of their immediate offspring in each case will be purebreeding brown-eyed, and one half will be hybrid brown-eyed individuals, and nothing in their external appearance will distinguish the dominant brown-eyed from the hybrid brown-eyed. If two of these hybrid brown-eyed individuals are selected as parents, some of their offspring will be blue-eyed. Indeed, it is possible and frequently occurs that the only offspring born of a hybrid brown-eyed pair (when there are but few children) are blue-eyed.

We have, then, blue-eyed individuals readily obtained when neither parent nor any one of the four grandparents had blue eyes. By mating two such recessive blue-eyed individuals, we shall in one generation convert into a 100 per cent blue-eyed family what had until this mating apparently been a 100 per cent brown-eyed family, since double recessive parentage gives 100 per cent extracted recessive young.

In exactly this way, since cancer susceptibility seems to be recessive to cancer resistance, it is possible to get in the third generation cancerous individuals in which neither parent nor any one of the four grandparents was cancerous, but in which each parent was hybrid noncancerous, while in each pair of grandparents one individual was purebreeding noncancerous, and one was hybrid noncancerous, as shown in figure 3.

Here, then, are cancerous individuals readily obtained, of which neither parent nor any one of the four grandparents had cancer. By mating two of these recessive cancerous individuals, we shall in one generation convert into a 100 per cent extracted cancer strain what until this mating had apparently been a 100 per cent noncancerous family.

In the same way, that is, by the continued mating of purebreeding black with hybrid black, it would be possible to prevent the appearance of white for twenty-five generations, or for fifty or as many generations as is desired. As long as one parent in each pair is purebreeding black, no white will occur in the offspring. As long as one of the parents in each pair is hybrid black, white will be carried potentially in the strain. This can be done for any number of generations desired. But when, in any generation, both of the parents selected are hybrid black, white offspring will appear.

In the same way blue eyes can be kept out of the family, but will remain in it potentially as long as purebreeding brown-eyed individuals are mated with hybrid brown-eyed. But when two hybrid brown-eyed individuals are mated, blue eyes will appear in their immediate offspring.

In exactly this way, I have found that as long as one parent is a pure-breeding cancer-resistant individual, no cancer will appear in the offspring. As long as one parent is a hybrid cancer-resistant individual, cancer susceptibility will inevitably be carried potentially in the family, through the hybrid cancer-resistant individuals, for any number of generations. When finally two hybrid cancer-resistant individuals are mated, some of their immediate offspring will be cancer susceptible. That is, in every character transmitted by heredity, cancer or any other character, whatever its nature may be, as long as a purebreeding dominant is mated with a hybrid carrier, the recessive character will not appear, but will certainly be transmitted through the hybrid carrier for any number of generations, while the mating is of this type. When eventually two hybrid carriers are mated, the recessive character will appear in some of the immediate offspring. In the chance matings of the human species, the mating of two hybrid carriers of any given recessive (like cancer) is almost certain to occur sooner or later. When it does, the recessive character appears in some of the children. This

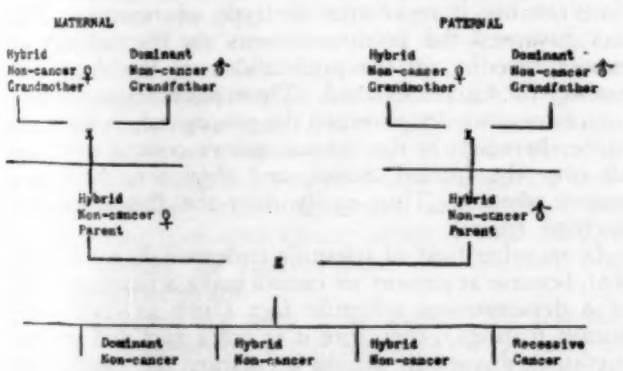

Fig. 3.—How cancerous individuals can be obtained by the classic method, when neither parent nor any one of the four grandparents had cancer.

accounts for the sudden appearance of cancer sometimes in human families in which there has been no known cancer for two or more generations.

When these facts of heredity are grasped, there is at once apparent the absurdity of attempting to settle the question of the inheritability of any character whatever by the statistical method. For while the statistician, endeavoring to settle the question of the inheritability of any disease, can perhaps get the death facts and the life facts of both parents and possibly of the four grandparents, and perhaps eventually even of all the great grandparents, he cannot discover which of these individuals are purebreeding resistant to cancer (or any other disease), and which are hybrid cancer-resistant, for there is no way to discover this fact except by the experimental method of selective breeding and analysis with the right number and the right kind of hybrid crosses.

Only by the experimental analytic method can the question of the inheritability of any character whatever be settled definitely. Prevailing monogamy in any species makes analyses very difficult.

EXPERIMENTALLY PRODUCED CANCER

In discussing the bearing of studies in experimentally produced cancer on the question of cancer heredity, let us briefly review the history of the fundamentalist reception of the demonstrated fact of the inheritability of cancer, and the facts of the experimental production of cancer.

When these studies in spontaneous animal cancer were first published in 1911, practically all other studies in animal cancer were being carried on with grafted tumors. It had been demonstrated [2] that the inheritance behavior of grafted tumors indicated multiple factors, paramount among which was a dominant, determining a successful "take" of grafted cancer in the first hybrid generation.

The fact that studies in this laboratory demonstrated the inheritance behavior of spontaneous cancer to be that of a simple mendelian recessive caused the fundamentalists to think that geneticists did not agree as to the behavior of cancer heredity. They therefore discarded the entire fact of the inheritability of cancer. As I have stated in a previous article,[3] the findings in these two lines of studies are in perfect harmony, since a "take" of grafted tumor depends on the normal regeneration of the host tissues, and a spontaneous cancer depends on the abnormal regeneration of the tissues. Both studies, then, demonstrate the dominance of normal regeneration over abnormal regeneration. And there is therefore not even disharmony in regard to the method of the inheritability of cancer for the fundamentalist to base his objections on.

Next in history come the so-called "spiroptera cancers" of Fibiger's work,[4] which were immediately taken by the fundamentalist as a proof that cancer could be experimentally produced in all subjects, and therefore was not inheritable, entirely disregarding the demonstrated inheritance behavior of cancer in every test made by every student of the subject. Fibiger's work, carried outside the inbred strain of rats in his own laboratory to wild Norway rats, other strains of laboratory rats and strains of mice, showed that spiroptera cancer was not produced in all subjects.

The results of his studies are thus in perfect harmony with heredity studies in grafted cancer and in spontaneous cancer; that is, spiroptera cancers were produced only in susceptible members of susceptible strains of susceptible races. The finished results of Fibiger's study of spiroptera cancer therefore left no ground for scientific opposition to the fact of the inheritability of cancer.

Bullock and Curtis' studies [5] in liver sarcoma in rats, following experimental feeding with tapeworm larvae,

2. Tyzzer, E. E.: J. Med. Research **16**: 519, 1909; J. Cancer Research **1**: 125 (April) 1916. Little, S. W.: J. Cancer Research **6**: 106, 1921.
3. Slye, Maud: J. Cancer Research **8**: 240 (July) 1924.
4. Fibiger: Det. Klg. Danske. selskab. Biol. Med. **1**: 11, 1918.
5. Bullock, F. D., and Curtis, M. R.: J. Cancer Research **8**: 1 (April) 1924.

fall into the same class with Fibiger's results; that is, they also demonstrate dependence on hereditary predisposition for success in the experimental production of these tumors.

Next followed the tar cancers, first produced by Yamagiwa in rabbits, and now widely studied in rats and mice by perhaps the majority of the present day workers in animal cancer research.

It is too early as yet to say what the final residuum will be from the study of tar cancers, since so many of these studies are still under way. But whether or not it is eventually found that tar cancer can be produced in all subjects, the conclusion cannot decide the question of the inheritability of cancer, and must be in agreement with all other facts of cancer, one of which is its demonstrated inheritability.

No one can deny the inheritability of the tendency to grow hair, yet continued painting with sufficiently strong coal tar products destroys the hair-growing mechanism. In all probability, continued painting with sufficiently strong coal tar will destroy every inherited tissue and every inherited function of the body. That is, no tissue, no function and no tendency of the body is immune from destruction. Coal tar products of sufficient concentration are very destructive agents and undoubtedly can destroy the cancer-resisting mechanism.

Thus the method used in the experimental production of unions may be destroying the very tendency it attempts to test. Therefore, the question of the inheritability of cancer resistance cannot be settled by determining whether cancer can or cannot be experimentally produced by any given method in any given set of subjects, since there is not and cannot be any complete biologic control in the field of heredity in such studies, nor any certainty that it is only the inheritability of the tendency to cancer resistance which is being tested in such experimentation.

PUBLIC PROPAGANDA

Another type of obstacle in establishing the facts of cancer heredity is the extraordinary idea apparently prevailing in some minds that since human heredity cannot at present be controlled, because we cannot control and experiment with human matings, the demonstrated facts of heredity do not apply to the human species and may therefore be categorically dismissed. For example, note the statement recently made by Wood of the Columbia Institute of Cancer Research:[6]

> Of course, the animal experimentation done by Maud Slye in Chicago and by Bullock and Curtis in my laboratory have definitely proved that in animals a susceptibility to cancer is transmissible. Of that there can be no question. The breeding experiments, however, are so complicated and take so long that if they were applied to human beings it would mean that for the last 5,000 years both parents of these unfortunate human beings would have had to have cancer. That is a concentration of breeding which cannot occur in the human race. So the facts of the high incidence of cancer in their experimental studies cannot be applied in full value to human beings.

This idea, that to test the inheritability of cancer in man would take 5,000 years, with double cancerous parentage in each generation, has no scientific basis whatever. The second argument is equally untenable, for Wood says in effect that the fact that we cannot make a 5,000 year test of the inheritability of human cancer warrants us in discarding the facts of cancer heredity so far as man is concerned.

An answer[7] to this statement appeared in The Journal, part of which is repeated here.

> The 100 per cent cancer strains that have been produced in any laboratory have been produced from a double cancerous parentage somewhere in the line. But this does not mean that there must have been a series of double cancerous parentage for any length of time corresponding to anything like 5,000 years of human heredity, or even for more than one generation. *One generation of double cancerous parentage will produce 100 per cent cancer susceptible offspring,* exactly as double albino parentage for only one generation will produce 100 per cent albino offspring.
>
> The long series of many generations of 100 per cent cancer have been charted, not because countless generations were necessary to produce them, but to demonstrate that they actually were 100 per cent cancer strains and continued so for as many generations as we continued a double cancerous parentage. It is not alone these strains of double cancerous parentage which prove the inheritability of cancer, but still more potent in this proof is the behavior of cancer in hybridization.
>
> Only two generations of exact facts are necessary to demonstrate inheritance behavior where the cross is between a cancerous individual and a noncancerous individual who is not a cancer carrier. Three generations of exact facts—not of double cancerous parentage—are necessary to determine how cancer behaves in heredity when a hybrid carrier is mated with a cancerous individual, or with a noncancerous individual that is not a cancer carrier. This is true in mice, in man or in any other animal, or in any plant.
>
> The difficulty in studying human heredity is not that we cannot have double cancerous parentage, or any other type of double parentage for 5,000 years, but that we cannot get the exact facts for even one generation. It is because of this lack of exact facts and because we cannot experiment on human beings in this and many other lines that we must get our exact facts from animal experimentation.
>
> That we are justified in applying these facts, where they are basic biologic facts, is one of the best assets derived from the discovery of the fact of evolution.

I bring up the quotation from Wood again at this time because it represents the type of reasoning that has governed the pronouncements on the subject of cancer heredity, in the publications of the American Society for Cancer Control. These publications in their turn have annually governed the propaganda concerning cancer heredity, in the various cancer control meetings all over the United States, and they are, moreover, quoted abroad. Thus easily does the fundamentalist doctrine spread.

In no other field of scientific endeavor do we assume that, because at present we cannot make a particular test of a demonstrated scientific fact (such as controlling human matings), therefore it is not a fact and we can forthwith discard it, nor do we discard the conclusions of higher mathematics and of higher physics because they are complicated.

The great difficulty in the study of human heredity is that man is so long lived an animal that no one person can collect accurate data for three generations. But this does not mean that there are no heredity facts unbrokenly expressing themselves in the human species just as they do in other animals of a shorter life span, whose exact records are being taken. If we should establish permanent records of periodic examinations of each living individual and permanent recorded accurate necropsy findings of all dead, in three generations

6. Wood, F. C., in discussion on cancer, J. A. M. A. **85**: 1050 (Oct. 3) 1925.

7. Slye, Maud: Cancer Heredity, J. A. M. A. **85**: 1242 (Oct. 17) 1925.

we should have valuable scientific data. These data would undoubtedly include matings of double cancerous parentage, matings of double noncancerous parentage, matings of noncancer with hybrid carrier, and matings of cancer with hybrid carrier. These are exactly the matings by which we test the inheritability of cancer in short lived animals, and such records, if accurately taken and correctly interpreted would furnish an equally exact test for the human species.

STRAINS SUPPOSED TO CARRY A FIXED CANCER PERCENTAGE

Another strong obstacle in the way of establishing a clear comprehension of the relation of heredity to cancer is the announcement by workers in heredity, and by other workers in medical research, of what they designate as strains of animals carrying a permanently fixed percentage of any given character, as, for example, cancer.

The literature has several instances of the announcement of strains carrying a fixed percentage of cancer, to which it is perhaps unnecessary to make reference here, except when the assumption of a fixed percentage of cancer within a strain has been taken as the single basis for further research, as in the recent work of Lynch [8] of the Rockefeller Institute and of Bagg [9] of Cornell Medical College.

The widespread use of tar cancers in current research and the marked success in obtaining high percentages of such proliferations have again strengthened in the fundamentalist mind the idea that cancer is not inheritable, irrespective of the fact of its demonstrated inheritability. This idea has urged on workers in cancer heredity the necessity of demonstrating the relation of tar cancer to cancer inheritance, and Lynch of the Rockefeller Institute has attempted to do this, using materials that were entirely unfitted for the problem involved.

Lynch used two strains of mice, one of which she designates as carrying a fixed high percentage of spontaneous mammary gland cancer, 65 per cent in bred females and 20 per cent in unbred females; and the other, as carrying a fixed low percentage of spontaneous mammary gland cancer, 28 per cent in bred females, and 4 per cent in unbred females. Her object was to determine whether or not painting with tar the skin of mice from these two strains would change the incidence of cancer within the strains, and whether the so-called high per cent cancer strain would show a greater increase in cancers than the so-called low per cent cancer strain.

As Lynch herself very aptly states, "To test the influence of heredity on the response of the skin to tar painting, it would be best to employ strains of animals exhibiting differences in the incidence of spontaneous cancer of the skin."

Not only would it be best in such a test to use as a basis of experimentation susceptibility to skin carcinoma, but it is futile to use anything else, since the tendency to other types and locations of neoplasms, such as mammary gland carcinoma, has no influence on the production of spontaneous skin cancer. Lynch's experiments, therefore, have no bearing on the problem attacked. Moreover, having designated her strains as 20 per cent and 4 per cent, respectively, of spontaneous mammary gland carcinoma in unbred females (thereby carefully distinguishing between the cancer rate in bred and in unbred females), she proceeds to use in the experiment, as she says, "approximately one-half males" *whose susceptibility to cancer of any kind has in no way been expressed.* She does not state the age of the mice used, although the average age for the appearance of skin carcinoma differs markedly from the average age for the appearance of mammary gland carcinoma, and the matter of age differences should be under careful control in such an experiment.

But the gravest objection to experiments of this kind is the assumption of fixed percentages of cancer within a strain that is not homozygous in regard to cancer. It is wholly unscientific to assume fixed percentages of any character within such a strain on the basis that, to date by the matings made, it has yielded such a percentage of the given character. The past history of cancer production within a heterozygous strain cannot scientifically be assumed as the certain future history of cancer within that strain, nor can it be taken as the criterion for the cancer behavior of any individual member of the strain, not subjected to analysis.

Every strain that is producing some cancerous and some noncancerous individuals is heterozygous to cancer, just as every strain that is producing some black and some white individuals is heterozygous to albinism. Every noncancerous member of a heterozygous cancer strain is heterozygous to cancer unless at least one parent of that individual was dominant noncancerous, and one half of those with one dominant noncancerous parent will be heterozygous to cancer, since the mating of a dominant with a hybrid carrier produces one-half dominant and one-half hybrid carrier. Any strain that has to date yielded 4, 20, 28 or 65 per cent of cancer, like Lynch's strains, is heterozygous to cancer, and the cancer potentiality of every one of its members is dependent wholly on what matings have been made, just as its future cancer percentage will depend on what matings may be made. In addition to its cancerous members, such a strain is made up of some dominant noncancerous members and some hybrid carriers, and nothing in the external appearance will distinguish between the latter two types.

As I have already pointed out in this paper, recessive characters, such as the tendencies to albinism, to blue eyes and to cancer, which are submerged in hybrid carriers wearing the dominant appearance, can be made to appear suddenly within a strain, by the mating of two hybrid carriers. It is thus shown to be possible to convert, by two matings, a strain heretofore always wearing 100 per cent of the dominant appearance into a strain expressing 100 per cent of the recessive.

We cannot scientifically say that any heterozygous strain inherently carries a fixed percentage of cancer. We can only say that during the life of the strain, it did, under the matings made and the handling given it, produce a certain percentage of cancer. We must at the same time admit that, with different types of matings and different handling, the same strains would have produced wholly different percentages of cancer. The very foundation, therefore, on which Lynch's entire experiment is based vanishes away. The problem can never be scientifically attacked by this method.

The work of Bagg of Cornell Medical College, reported at the 1925 meeting of the American Society for Cancer Research, is open to a similar basic criticism. Bagg's experiments were designed to test the

8. Lynch, Clara J.: J. Exper. Med. 42: 829 (Dec.) 1925.
9. Bagg: J. Cancer Research 9: 498, 1925.

relation between functional disturbances of the breast to the incidence of mammary carcinoma in mice. He says that "a carefully inbred strain of animals with a well known low rate of tumor incidence was selected." He does not state what this low rate was. The control group of mice showed an incidence of 5 per cent of breast carcinoma. These mice, he says, "were breeding normally; that is, the females were remated only after nursing their litters for about six weeks." Of course this method is in miniature the method of human breeding and it does not necessarily define normal breeding in mice. The group of fifteen mice subjected to various types of experimental dysfunction of the breast showed an incidence of 85 per cent of breast carcinoma.

I do not find any suggestion by Bagg that his results had any bearing whatever on the question of the inheritability of cancer, or that they were intended to have such a bearing. The fact of the inheritability of cancer, however, has a marked bearing on his experiments. It must be that he recognized the necessity of taking advantage of cancer susceptibility, since he very wisely selected a strain that was yielding carcinoma of the breast. Had he sought results opposed to the fact of cancer heredity, he should have made his tests on a strain that was analyzed cancer free, and should have secured complete biologic control in every other element of his experiment.

His experiments, then, were apparently designed to test the relation of experimentally produced breast trauma to breast carcinoma, in strains predisposed to breast cancer. In this selected strain, predisposed by heredity to breast carcinoma, he found a greatly higher incidence of breast cancer in the individuals that he had selected for experimental breast trauma.

There are two pertinent suggestions to be made here:

1. As I pointed out in my discussion of Lynch's work with tar cancers, it is unscientific to assume a fixed percentage of cancer in strains heterozygous to cancer. The fact that a strain, under the matings made, has yielded a given percentage of cancer, for example, as in Bagg's control group 5 per cent, cannot be taken as the criterion for the future production of tumor in that strain, or the percentage of tumor production in any other group of any other individuals in that strain, unless every individual involved has been analyzed and his cancer potentiality has been definitely established.

Bagg's conclusion, therefore, that the 85 per cent breast cancer incidence in his experimental group was due wholly to experimental procedures lacks the same scientific basis lacking in Lynch's work. It is easily possible in a strain which to date has never yielded more than 5 per cent of breast cancer to secure suddenly 100 per cent of breast cancer by the right selective matings, or 85 per cent. It is not impossible that the fifteen mice selected for his experimental group were exactly the ones which under any handling would have produced breast cancer; and such a possibility should be ruled out by complete biologic control.

Any strain which to date has produced 5 per cent or 85 per cent of cancer, like Bagg's strains, is heterozygous to cancer, and no assumptions are warranted as to the cancer potentiality of any unanalyzed groups or individual members of the strain. Moreover, in all such experiments, these should be recognized the source of error, even in individuals examined at necropsy, of deaths from intercurrent disease that prevents cancer development.

I have for years been urging on research workers the necessity of using biologically analyzed stock for their experiments, instead of assuming that results secured on unanalyzed stocks are wholly due to experimental procedures.

2. So far as I know, there is no worker in cancer research today who does not recognize the necessity of stimulations, irritations or traumas, either minute or gross, as a basis for cancerous growth. The fact that various types of irritations play an important part in the causation of cancer in susceptible individuals is one of the best basic arguments for defining cancer as an abnormal regenerative process. This regeneration after trauma apparently is abnormal in these cancer susceptible subjects, because of the lack of a differentiating mechanism in the tissues. It seems to be this local lack of a differentiating mechanism in susceptible tissues that is the hereditary element in cancer susceptibility. That is, the type of local response made to a given type of irritation is determined by heredity, whatever the type of that irritation may be.

If Bagg had worked with individuals every one of which was analyzed as to its cancer potentiality, if he had selected groups exactly homologous in the matter of cancer potentiality, individual for individual, and with such groups of homologous individuals and with numbers large enough to make a test had obtained just such results as he did obtain in his experiment, he would have given us a scientific demonstration of the relation of these particular types of trauma to breast cancer causation in his tested strains. Such conditions would have constituted a complete biologic control for those particular groups of animals.

It is very easy to assume after any particular experimental procedures that the end-results are wholly caused by such procedures; but if animals are used which have not been analyzed in the potentiality being tested, there is no basis for such an assumption.

In this connection, it might be of interest to mention mouse 21663 of this stock. She was picked up when 2 weeks old, with two carcinomas of the mammary gland, 10 and 3 mm., respectively, in diameter. She lived one week more, and at necropsy and on histologic examination, proved to have two carcinomas of the mammary gland, bilateral kidney sarcomas (the left kidney almost entirely destroyed), and osteosarcomas of the fifth rib and of the spinal column. Needless to say, this mouse had not been mated, nor had her ovaries been experimented on by removal or otherwise. But she was the great granddaughter of female 12058 with sarcoma of the kidney, bilateral sarcoma of the uterus and bilateral sarcomas of the ovaries. She was the granddaughter, five generations removed, of female 26 with sarcomas of the kidney, ovary, liver and mesentery. She was the granddaughter, eight generations removed, of female 3 with a sarcoma-carcinoma of the mammary gland, a malignant adenoma of the liver and sarcoma metastases in the kidney, in a strain which was being deliberately bred for kidney and liver tumors, and in her ancestry there was considerable percentage of osteosarcomas. It is also of interest to note that exactly the types of so-called functional disturbance used in Bagg's tests in his groups 1 and 2, that is, early and constant breeding of young females with removal of the young immediately after birth, have in this laboratory never occasioned mammary gland carcinoma in analyzed individuals of analyzed cancer free strains.

Although Bagg himself did not assert that his results had any bearing on the fact of the inheritability of

cancer, in the discussion of his paper Ewing[10] of Cornell Medical College took occasion to say: "Carcinoma has been developed in a strain of animals which had very little natural tendency to develop the disease. If there had been any congenital or hereditary characters in the development of these carcinomas, it does not appear in these experiments of Bagg's. He has watched this group of animals for thirteen years and has found a very low incidence of cancer, so I think that these experiments offer a somewhat difficult problem to those who believe in the congenital or hereditary incidence of cancer."

So far as I know, no research worker who has made any study of the incidence of cancer defines it as a congenital disease, so we may dismiss that portion of Ewing's remarks. Moreover, the inheritability of cancer is no longer a matter of belief, but it is a matter of exact demonstration.

Evidently, Ewing did not see the paradox in his first two sentences. For in the first he admits the strain used had a little natural tendency to carcinoma of the breast; while in the second, he says that no hereditary character in the development of the disease appeared in the experiment.

As I have stated, a strain which to date has been producing 5 per cent breast cancer can in one mating be changed to a wholly different percentage of breast cancer, and any experimental procedure which assumes the continuation of a fixed percentage of cancer in unanalyzed strains is based on assumption only.

Loeb[11] also, in attempting to demonstrate the relation of the ovaries to breast cancer incidence, used what he called "a strain of mice with a known high tumor incidence," and concluded from his experimental procedures that removal of the ovaries lowered the incidence of tumor within the strain.

As I have repeatedly stated since the first publication of this work fifteen years ago, the type of product within a strain depends on the matings within that strain, just as certainly as the type of chemical result depends on what chemical combinations are made. If we combine zinc with sulphuric acid we shall get one kind of result; if we combine it with hydrochloric acid we shall get a different result. In just this way and just as surely, if we mate an albino with a red mouse, we shall get one type of offspring; if we mate the same albino with a gray mouse, we shall get a different type of offspring. If we mate the same gray mouse with a first generation albino derived from red (and hence a hybrid carrier of red), we shall get entirely different results; that is, some red, in the first hybrid generation.

Any strain can in one mating be changed in the percentage it carries of any inheritable character, including cancer, according to the mating made. The greatest caution, therefore, will be necessary to secure complete biologic control, in any effort to discover the relation which experimental procedures of any kind may bear to the causation of cancers of any type or any location, or the relation of the basic facts of cancer heredity to such results. The assumption that fixed percentages of cancer can permanently define a heterozygous strain, or any group or any individual members of such a strain, will certainly have to be excluded.

We shall never get the right idea of heredity, and hence we shall never work out correctly the facts of inheritance and its complex and intricate influences throughout all organic response to every type of test, until we conceive of strains as plastic in every generation, susceptible of being changed by one mating of the right kind from 100 per cent of a character to zero per cent of that character, or to 50 per cent, and susceptible of being changed by a series of matings to any percentage desired. If this were not true, and if strains were fixed in the percentage they carried of any inheritable character, there would be no such thing as heredity, since the new hybrid mating would bring nothing to the strain; that is, the new individual would have no inheritance to offer.

10. Ewing, James: J. Cancer Research 9: 500 (Dec.) 1925.
11. Loeb, L.: J. Cancer Research 1: 1 (Jan.) 1916.

ALL FACTS OF CANCER MUST BE CONSISTENT EACH WITH THE OTHERS

In the diverse lines of approach used by the many workers in any field of scientific research, there are sure to be made evident gaps in our knowledge. But these gaps do not entitle us to deny a scientifically demonstrated fact, because we cannot yet in our own minds make it accord with our own particular discovery or our own particular theory.

As in any other field of scientific endeavor, all the facts in the field of cancer research must be consistent each with every other. If it should eventually be possible to produce experimental cancer in every subject, this would not disprove the inheritability of cancer any more than the fact of the inheritability of cancer proves that it must be impossible to produce cancer experimentally in every subject. No biologist has ever made such an assertion. There must instead be a third fact that harmonizes these two. This third fact is already evident in the highly destructive nature of the experimental agents used, which may well destroy the cancer resistant mechanism or any other bodily mechanism. Spontaneous cancers do not arise in every individual, either in the human species or in lower animals even under identical conditions; this is a demonstration that there is a cancer resistant mechanism present in some members of every species. No amount of experimentally produced tumor can offset this fact. The explanation of these tumors will have to harmonize with it.

Again, if cancer should eventually be demonstrated to be a specific infection, this would not disprove its inheritability any more than the fact that the inheritability of cancer definitely proves that cancer is not a specific infection. There must be a third fact that would harmonize these two. That third fact is readily discerned even now in the hereditary basis of every organic response to every type of stimulation or irritation, whether it is a specific germ or anything else, although there is variation in the types of inheritance behavior, and apparently these variations have a bearing on the etiology of various diseases.

The third most frequent objection to the inheritability of cancer, namely, that although proved for lower mammals it does not apply to man, is answered by the fact of evolution. Similar tissues derived in the course of evolution from the same ancestry must respond in the same way as the ancestral tissues to the same types of stimulation. Only so could an unbroken series of organisms evolve each from the other.

The scientific method of procedure for those who cannot accept the evolutionary evidence is not categorically to deny what they cannot disprove and what has indisputably been found true by many workers, but rather to begin the measures which inevitably must produce scientific data for the investigation of heredity in man.

MEDICAL DIATHERMY IN KIDNEY DISEASES

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Medical diathermy, the heating within physiologic limits of bodily structures with high frequency currents, may be employed to advantage in glomerulonephritis and toxic nephrosis.

The efficiency of this therapeutic procedure depends on its judicious application according to the character of the case. Glomerulonephritis, whose essential feature is the more or less complete blockade of the glomeruli involved and the subsequent renal ischemia, is a condition in which the local administration of high frequency currents to the diseased kidney or kidneys may be beneficial. The heating causes the arteries, arterioles and capillaries within the area under the influence of the high frequency current to dilate, and is therefore apt to improve the impaired circulation. The clinical effect of this active hyperemia is readily observed. Following the diathermic treatment, the urinary output is raised; the content in the urine of liquid blood is promptly heightened, and the number of tiny coagula appearing in the urine is increased. In case a decapsulation of one or both kidneys is undertaken, the "sweating" of the denuded organs is enhanced by a subsequent diathermic treatment, as evidenced by the fact that the serum emanating from the point of drainage becomes copious and acquires a rosy hue.

The addition of diathermy to the standard antinephritic regimen seems to hasten the absorption of nephritic edemas. It is argued that diathermy is contraindicated in acute nephritis because it is apt to increase the renal bleeding and is also apt to raise the already high blood pressure, a symptom usually accompanying nephritis. Increased bleeding from a nephritic kidney may be looked on as therapeutically desirable, this forced flow being helpful in raising the exudative blockade within and around the glomeruli. The rise of blood pressure in nephritis may be considered a compensatory hyperactivity of the heart. A nephritic kidney offers increased resistance to the propulsion of the blood stream. In order to force the necessary amount of blood through it, an augmented heart action is essential for furnishing the proper renal blood supply. From either point of view, the objections mentioned cannot be upheld.

TECHNIC

The object being to heat the kidneys, they must be localized. This enables the operator to place the electrodes properly. While occasionally it may be feasible to locate the kidneys by palpation, the surest way of ascertaining their position is the taking of a roentgenogram. Incidentally, at times roentgen rays influence rather favorably the course of a nephritis by reducing the surplus of exudation that chokes the glomeruli. Electrodes of equal size, approximately of the dimensions of the kidneys, are placed opposite each other, one in front and one in back, including between them the organ to be heated. Blank metal electrodes are generally considered most satisfactory.

The dosage in diathermy for nephritis should be considered from two points of view. It is of course necessary to produce a certain amount of heat in order to answer the therapeutic purpose, but the influence of the heat on the heart must also be taken into account. In practically every instance of nephritis, the heart is involved to a greater or lesser extent. While it is true that moderate heating of the heart is beneficial in certain diseases of the heart, any excess of heating may lead to a rapidly developing fatigue of this organ. Therefore, if diathermy is applied to the left kidney, especially if it is high up in the diaphragmatic cupola, the amperage must be kept strictly within moderate limits. The same consideration also militates against a simultaneous diathermy of both kidneys, which may produce overheating of the thorax and subsequently of the heart.

Exceeding the safe limit is marked by restlessness of the patient, profuse perspiration and precordial anxiety. Prolonged sittings may lead to an undesirable accumulation of heat; therefore, it is advisable to restrict the initial treatments to about fifteen minutes. After the tolerance of the patient is established, the duration of each diathermic treatment may be extended if deemed necessary. There is no objection to the repetition of diathermic treatment every other day until the nephritic symptoms have receded. In nephrosis, direct heating of the kidney *a priori* does not hold out any promise of success, because in such cases vascular impediment is not a prominent feature; clinical experience bears out this theoretical reasoning. But diathermy may be used to advantage in a different manner of application. A charactertistic symptom of nephrosis is the retention of chlorides within certain structures of the body, among which the subcutaneous cellular tissue is prominent. These structures act as intermediary and under certain conditions as temporary depositories only for the metabolic end-products before they are carried by the blood stream to the kidneys for final disposal and elimination. This physiologic rôle of these structures is so pronounced that some authors call them the adventitious kidney. If for some reason the capillary complex of this system is depressed in its function, an excessive accumulation of chlorides will result which, finally leads to the establishment of edema. Capillaries and arterioles as a rule respond quickly to medical diathermy. Results may be expected in many cases, if the temperature of the whole body is moderately raised by the use of general diathermy, the so-called autocondensation. In addition the lower extremities, so prone toward development of edema, are separately heated at intervals by the high frequency current. If edema of the lower extremities already prevails, however, the amperage is kept within low limits, because an edematous skin is vulnerable.

The question concerning the amperage to be employed in each case cannot be answered *a priori* by quoting exact figures. Each diathermic apparatus is a unit by itself, and the resistance to the electric current offered by the body of the patient depends also on individual factors, among which the thickness of the layers covering the organ to be heated plays a prominent rôle. The safe procedure is to start with the minimum of current and gradually increase its volume until the patient reports a distinctive sensation of warmth but not of heat. After the tolerance of the patient is established, the readings of the amperemeter may be used in the following treatments.

CONCLUSION

There is no mysterious electrical influence brought to bear on the renal cells by diathermy; whatever benefits are obtained are due to the heat produced within the perirenal and the renal structures by the resistance these

parts offer to the high frequency current forced through them. The efficiency of any antinephritic treatment depends to a great extent on its early administration, and the same holds good for diathermy. The sooner after the discovery of a nephritis it is applied, the more favorable will be the outlook. Medical diathermy is by no means a cureall or a specific for nephritis or nephrosis. It is simply a valuable aid and will furnish results only in combination with the other therapeutic measures indicated, such as removal of the etiologic infectious foci, the proper dietary regimen, the administration of cardiacs and diuretics and, if suggested by the prevailing conditions, nephrolysis and decapsulation.

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SYMMETRICAL GANGRENE OF MALARIAL ORIGIN *

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The occurrence of gangrene following infectious diseases is not uncommon; but the occurrence of symmetrical gangrene as a complication in such conditions is comparatively rare and is barely mentioned in any of the textbooks. The occurrence of symmetrical gangrene in malaria, which is classified by Dieulafoy [1] under the infectious diseases proper to man, is mentioned by only a few authors; of all the complications and sequelae of malaria, gangrene is probably the rarest.

Brusa [2] reports a case of symmetrical gangrene in a child, aged 14 months, following measles; Learmonth,[3] a case of gangrene in the lower extremities in a child, aged 3 years, complicating scarlet fever which began simultaneously in the two limbs. Buerger [4] refers to gangrene as complicating syphilis, typhoid, influenza, typhus fever, cholera and scarlet fever during the period of convalescence; Darier [5] and Kerr [6] refer to thrombosis following typhoid, the former mentioning gangrene of the leg as a terminal result. Ransome and Corner,[7] after a diligent search in the libraries of the Royal Society of Medicine and of the Royal College of Surgeons of England in 1910, collected reports of eight cases of gangrene following convalescence from diphtheria, and added one additional case of their own. In seven of the nine, the leg was affected. Bailly,[8] in 1920, in an article on the occlusion of the arteries of the limbs in malignant diphtheria, collected reports of seventeen cases of gangrene from the literature and added one of his own. All were of the dry type. In two, the gangrene involved the upper limbs; in sixteen, the lower. In five cases, both lower limbs were involved. Barraud,[9] in 1904, made a summary of 103 cases of gangrene of the extremities following the infectious diseases in young patients. He chose young subjects for his study in order to exclude senile and presenile gangrene due to arteriosclerosis in older persons; he also excluded spontaneous gangrene resulting from Raynaud's disease. Of the cases recorded in the summary of 103, typhoid fever is given as the cause of gangrene in forty-four, typhus fever in eleven, measles in six, scarlet fever in five, pneumonia in five, acute articular rheumatism in five, influenza in two, diphtheria in two, erysipelas in two, malaria in two, pertussis, dysentery, relapsing fever, cholera morbus, varicella in one each, and various surgical conditions in fourteen.

Malaria is mentioned as a causative factor in symmetrical gangrene by Dana,[10] Castellani and Chalmers,[11] DaCosta,[12] Elliot,[13] Stelwagon,[14] and Church and Peterson.[15] In 1869, eleven years before the discovery of the pathogenic agent of malaria by Laveran, Rey [16] published a report of the first case of symmetrical gangrene observed in a man who had had intermittent fever in Senegal and had suffered a relapse on his arrival in France. Laveran [17] described one instance of gangrene of both legs as a complication of malaria. In 1875, Mourson [16] noticed a local asphyxia following an attack of intermittent fever and called especial attention to the coincidence. Fischer [16] also had seen a case of the same kind, and Calmette,[18] in 1877, devoted an article to reports of local asphyxia of the extremities in connection with malarial intermittent fever. Leloir [19] observed three cases which seemed to strengthen this conclusion.

Osler,[20] in 1900, reported a case of multiple gangrene occurring in estivo-autumnal malaria and involving the feet, hands, buttock and occiput. Examination of the blood revealed crescents and estivo-autumnal organisms in unusually large numbers.

Hammond,[21] in 1913, reported from India two cases of gangrene of the extremities—one with recovery, the other fatal. In the case ending in recovery, malignant tertian rings were found, "one corpuscle in every three" containing these forms; in the fatal case, the blood findings regarding the type of malaria were not recorded.

Paisseau and Lemaire,[22] in 1917, reported two cases of gangrene of malarial origin. In each instance the gangrene was symmetrical and involved the lower extremities. Both cases were fatal. Blood examination in each showed a severe infection with *Plasmodium falciparum*.

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3. Learmonth, G. E.: Gangrene of the Lower Extremities Complicating Scarlet Fever, Canad. M. A. J. **15**: 69 (Jan.) 1925.
4. Buerger, Leo: The Circulatory Disturbances of the Extremities, Philadelphia, W. B. Saunders Company, 1924.
5. Darier, J.: A Textbook of Dermatology, translated by Pollitzer, Philadelphia, Lea & Febiger, 1920, p. 315.
6. Kerr, R. R.: Thrombosis of the Inferior Vena Cava, Brit. M. J. **2**: 1112 (Dec. 31) 1921.
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8. Bailly, L. A.: Occlusion of the Arteries of the Limbs in Diphtheria, Internat. Clin. **2**: 157, 1920.
9. Barraud, S.: Ueber Extremitäten Gangräne in jugendlichen Alter, Deutsch. Ztschr. f. Chir. **74**: 237-292, 1904.
10. Dana, C. L.: Textbook of Nervous Diseases, Ed. 4, New York, William Wood & Co., 1897, p. 206.
11. Castellani, A., and Chalmers, A. J.: Manual of Tropical Medicine, Ed. 2, New York, William Wood & Co., 1913, p. 910.
12. DaCosta, J. C.: Modern Surgery, Ed. 7, Philadelphia, W. B. Saunders Company, 1918, p. 172.
13. Elliot, G. T., in Morrow's System of Genito-Urinary Diseases, Syphilology and Dermatology, New York, D. Appleton & Co. **3**: 376, 1895.
14. Stelwagon, H. W.: Diseases of the Skin, Ed. 7, Philadelphia, W. B. Saunders Company, 1914, p. 432.
15. Church, A., and Peterson, F.: Nervous and Mental Diseases, Ed. 9, Philadelphia, W. B. Saunders Company, 1921, p. 547.
16. Cited by Leloir (footnote 19).
17. Laveran, cited by Blumer in Osler's Modern Medicine, New York, Lea & Febiger **4**: 516, 1908.
18. Calmette, E.: Des rapports de l'asphyxie locale des extrémités avec la fièvre intermittente paludéenne, Rec. de mem. de méd. mil. **33**: 24-51 (Jan.) 1877.
19. Leloir, H., in Twentieth Century Practice, New York, William Wood & Co., **5**: 807, 1896.
20. Osler, William: A Case of Multiple Gangrene in Malarial Fever, Bull. Johns Hopkins Hosp. **11**: 41 (Feb.) 1900.
21. Hammond, F. A. L.: Malarial Gangrene, Indian M. Gaz. **48**: 228 (June) 1913.
22. Paisseau and Lemaire: Deux cas de gangrène des membres d'origine palustre, Bull. et mém. Soc. méd d. hôp. de Paris **41**: 219-235 (Feb. 9) 1917.

ETIOLOGY AND MECHANISM OF SYMMETRICAL GANGRENE

It is agreed that gangrene is due to lack of nourishment of the part affected. Symmetrical gangrene is usually of the dry type, because it is the result of an obstruction opposed to the inflow of arterial blood. According to MacCallum,[23] this may be an effect of the active contraction of the blood vessels through the intermediation of the vasomotor system, or to a complete obstruction or blocking of the artery by some foreign substance that is lodged there.

The arterial obstruction may, therefore, be due to: (1) constriction of the arterioles; (2) embolism, or (3) thrombosis.

1. *Constriction of the Arterioles.*—Darier,[5] Church and Peterson,[15] Greene,[24] Dennis,[25] Adson and Brown,[26] Kaposi[27] and Calmette[18] subscribe to the view that vasoconstriction may cause gangrene. Raynaud[28] held that the gangrene is probably caused by a tetanic condition of the great sympathetic nerve which in turn produces contracture of the arterioles. Trophic gangrene, in the opinion of Keene,[29] is probably caused by a spasm or paralysis of the arterioles, rather than through special trophic nerves governing nutrition, thrombosis preceded by nutritive alterations in the vascular intima being considered the most prominent factor. It is also his opinion that gangrene produced by cold or by long continued action of certain drugs, such as ergot, as well as Raynaud's gangrene, is explained in a similar manner, but he states that it is "a question as to whether the mortification is due directly to vascular spasm or arises secondarily from alterations in the intima followed by obstructive thrombosis, with the chances in favor of the latter."

Neuritis is regarded as one of the causes of symmetrical gangrene. It is so regarded by Pitres[30] and Vaillard,[30] whose views have not been generally accepted. Tyson[31] takes the view that the theory of arteriole spasm suggested by Raynaud himself best explains the condition. In nine cases of gangrene following diphtheria reported by Ransome and Corner,[7] one case is termed Raynaud's disease. It is important to differentiate the symmetrical gangrene of the extremities of the Raynaud type from the gangrene due to embolism and thrombosis. The differentiation has been pointed out by Osler,[20] who states that the phenomena of Raynaud's disease may occur as a sequence of any of the specific fevers, and that a large proportion of all the cases of local gangrene occurring during or after one of the fevers have nothing whatever to do with this affection. To aid in such differentiation is the fact that Raynaud's gangrene usually develops in paroxysms and all degrees may be observed, at times a simple asphyxia of the limb, at others an asphyxia followed by gangrene. Moreover, in Raynaud's disease there is possibly an accentuation rather than an absence of the arterial pulsations in the affected limb as found in embolism and thrombosis. In both embolism and thrombosis this absence of pulsation in the arterial trunks of the limbs is the one symptom, above all others, which most readily affirms the existence of such conditions.

2. *Embolism or Plugging of the Arterioles.*—"Embolism," as defined by Welch,[32] "is the impaction in some part of the vascular system of any undissolved material brought there by the blood current." In six of the nine cases of gangrene complicating diphtheria reported by Ransome and Corner,[7] the gangrene was due to embolism following cardiac thrombosis. The cause of cerebral attacks in malaria, according to Manson,[33] has been found on postmortem examination to be due to embolism by the accumulation of the malarial parasites in the capillaries of the nerve centers involved. Marchiafava and Bignami[34] state that the circulatory changes found in the brain capillaries may occur in other organs and systems. MacCallum,[23] in explaining the cause of embolism, mentions bacteria and protozoa as possible causative factors. Castellani,[35] in discussing the localization of the malarial parasites, refers to the localization in many organs; he even mentions localization of the parasites in the appendix. In a necropsy mentioned by Hines[36] on a patient dying of estivo-autumnal malaria, the capillaries of the brain were found to be plugged with malarial parasites. The same condition may exist in the extremities of those affected with malaria, thus causing gangrene.

3. *Thrombosis.*—The obstruction opposed to the inflow of arterial blood may be a thrombus. There seems to be a unanimity of opinion that gangrene ensues when the arterial circulation is thus impeded. Among those holding this view are Warbasse,[37] Buerger,[4] Darier,[5] DaCosta,[12] Brusa,[2] Tyson,[31] Osler and McCrae,[38] Learmonth,[3] and Kramer.[39] According to Buerger,[4] the clotting process is apt to occur in the arteries of the extremities because of the small size of the vessels and the retardation of the blood stream; the clot may not adhere sufficiently to obliterate the artery, but usually obliteration of the artery occurs with extension of the thrombotic process toward the periphery. Goldschmidt[28] inclines to the view that there is an obliterating endarteritis. Schuster[40] and d'Arnellas[40] report cases of gangrene of the toes as due to ascending peripheral arteries caused by syphilis. Fox[41] reports a case presenting Raynaud's phenomena, viz., local syncope, local asphyxia, and gangrene, occurring in syphilitic endarteritis, which caused obliteration of the vessels. Chesky[42] considers that arterial occlusion may occur through septic or toxic endarteritis; on such a lesion a thrombus may be engrafted. Many authors report the finding of thrombi on pathologic examination of amputated parts. Johannsen[43]

23. MacCallum, W. G.: A Textbook of Pathology, Ed. 2, Philadelphia, W. B. Saunders Company, 1921, pp. 18, 30, 120 and 777.
24. Greene, C. L.: Medical Diagnosis, Ed. 5, Philadelphia, P. Blakiston's Son & Co., 1922, pp. 463 and 1270.
25. Dennis, F. S.: Gangrene, Internat. Clinics, January, 1892, p. 100.
26. Adson, A. W., and Brown, G. E.: Treatment of Raynaud's Disease, J. A. M. A. **84**: 1908 (June 20) 1925.
27. Kaposi, M.: Pathology and Treatment of Diseases of the Skin, translation from the German by Johnston, New York, William Wood & Co., 1895, p. 263.
28. Cited by Dieulafoy (footnote 1).
29. Keene, W. W.: Surgery, Its Principles and Practice, Philadelphia, W. B. Saunders Company **1**: 313-325, 1912.
30. Cited by Keene (footnote 29).
31. Tyson, James: The Practice of Medicine, Philadelphia, P. Blakiston's Son & Co., 1896, p. 1086.
32. Cited by Mason (footnote 45).
33. Manson, Patrick: Tropical Diseases, Ed. 5, New York, William Wood & Co., 1914, p. 74.
34. Marchiafava, E., and Bignami, A.: "Malaria," in Twentieth Century Practice of Medicine, New York, William Wood & Co., **19**: 350, 1900.
35. Castellani, Aldo: Proceedings of the International Conference on Health Problems in Tropical America, Kingston, Jamaica, Aug. 1, 1924, Boston, United Fruit Company, 1924, p. 73.
36. Hines, L. E.: Accidental Malarial Infection in Syphilis of the Brain, J. A. M. A. **83**: 1161 (Oct. 11) 1924.
37. Warbasse, J. P.: Surgical Treatment, Philadelphia, W. B. Saunders Company **1**: 318, 1923.
38. Osler, William, and McCrae, Thomas: The Principles and Practice of Medicine, Ed. 9, New York, D. Appleton & Co., 1923, pp. 1111, 678 and 248.
39. Kramer, cited by Buerger (footnote 4, p. 452).
40. Quoted by Fox (footnote 41).
41. Fox, G. H.: Notes on Some Cases of Symmetrical Gangrene: Relation to Arteritis, M. Rev. of Rev. **13**: 371 (May) 1907.
42. Chesky, V. E.: Gangrene of the Extremities Complicating Puerperal Sepsis, Surg. Gynec. & Obst. **38**: 72 (Jan.) 1924.
43. Johannsen, cited by Sajous: Cyclopedia of Practical Medicine, Philadelphia, F. A. Davis Company **6**: 910, 1901.

reports a case of gangrene of the foot noted during the course of an attack of influenza; the arteries of the amputated part were found to be occluded by thrombi. Poupon,[44] in 1883, in a necropsy in a case of dry gangrene of the leg following diphtheria, found a clot 3 cm. long in the popliteal artery. In one case of gangrene in the foot following malaria, Barraud [9] noted thrombosis of the popliteal artery of the amputated part. The extent of the gangrene does not depend solely on the size and importance of the occluded artery; on the contrary, it depends on the completeness of the establishment of the collateral circulation, which is usually sufficient to reestablish the circulation in the greater part of the territory supplied by the occluded vessel.

THE CAUSE OF THROMBOSIS

A thrombus may be defined as a solid mass or plug formed in the living heart or blood vessels from constituents of the blood (Welch [32]). According to the opinion of Welch,[32] MacCallum [23] and Mason,[45] the principles concerned in thrombus formation are similar to those concerned in normal blood coagulation. Most of the theories on blood coagulation assume that in the circulating blood there is no clotting because there is no active thrombin, this substance being present in its inactive form, prothrombin. Howell's [46] theory assumes that "prothrombin can be changed to thrombin by the action of calcium alone, but that in the circulating blood this reaction is prevented by the presence of an inhibitory substance which affects the prothrombin and may, therefore, be designated in general as an antiprothrombin. The function of the tissue extract, derived from the platelets or other cells, which in this theory is believed to consist essentially of cephalin or a cephalin-protein compound, is to neutralize this inhibitory substance and liberate prothrombin so that it can be activated by the calcium." Howell [46] further states that when the internal coat of a blood vessel is injured, as for instance by a ligature, the altered endothelial cells act as a foreign substance; according to the investigations of Durante,[47] stagnant blood clots in living vessels only when their endothelium is in an abnormal condition. Weigert [47] and Zahn [47] lay especial stress on destruction of white blood corpuscles in the formation of a thrombus, and Fitz [48] states that the destruction of the red blood corpuscles is also of importance. Mason [45] assumes that the circulating blood as it passes through the normal tissues is maintained in a delicate equilibrium and that various factors, especially those substances capable of carrying an electronegative charge, are capable of disturbing this equilibrium, the most common injury being injury to the tissues. He quotes Morse [32] as calling attention to the fact that an extract prepared from the intima of the blood vessels is an active coagulant. According to the observation made by Wooldridge,[32] the stroma of the red cells when freed from hemoglobin acted as any tissue extract in accelerating blood coagulation. Aschoff,[49] in his classification of thrombi, describes one form of thrombus which is composed of the débris of red cells and other cells which may appear in quantities after some hemolytic process.

Aschoff [50] says, in connection with the subject of thrombosis, that we may "in all justice assign to infection the most important etiological rôle." He mentions that in thrombosis there is not a single cause, but many conditions which are closely related to the occurrence of thrombosis. Among these may be mentioned: "first, changes in the blood plasma (diminished or increased coagulability); secondly, changes in the blood elements (increased or diminished powers of agglutination); thirdly, changes in the blood flow (slowing and formation of eddies); and lastly, changes in the vessel wall itself (endothelial damage)." As regards the phenomena that precede thrombosis, the same author leaves unsettled the point as to whether such phenomena are of a type "long known to workers in bacteriology or serology, or whether they are chemicophysical" in nature; he further states that the agglutinability of platelets depends on the chemicophysical characters of the blood stream in which they are suspended.

According to MacCallum,[23] a thrombus begins by deposition on the walls of blood channels of a minute pearly translucent mass of platelets which grows by adhesion of other platelets as they come by; the platelets quickly catch passing leukocytes; fibrin forms and entangles red blood corpuscles. Even the final cessation of bleeding from a vessel is really due to a form of thrombosis, since the clot is produced in streaming blood.

The question as to the proximate cause of the formation of thrombi has been answered in various ways. Most of the older writers assumed a primary injury of the wall (Eberth,[49] Schimmelbusch [49] and Welch [49]), which allowed the production of the thromboplastic substance. Aschoff [50] and his colleagues contend that thrombi are essentially produced by some mechanical obstruction or slowing of the stream. MacCallum [23] says: "As a predisposing and later as a guiding factor controlling the architecture of the thrombus, modifications of the velocity and direction of the current are undoubtedly of great importance, but for the first step in the lodgment of platelets, injury to the endothelium seems to me to be of prime significance."

In considering the endothelial damage in the arterial wall in connection with the mechanism of thrombosis, it is necessary to take into consideration the relationship that exists between bacteria or their poisons and the arterial lesions, as manifested by clinical observation, postmortem findings and animal experimentation.

Frothingham [51] made a study of the aortas of thirty-six persons who died from the acute infections. Of these, twenty-one showed thickening of the intima, eleven showed fat in the intima, and four had fat in the muscle fibers of the media.

Hektoen [52] succeeded in producing endarteritis with the tubercle bacillus. The organisms, in suspension, were injected into the carotid artery of a dog, and the animal was killed about a month later. Necropsy revealed numerous minute grayish nodules in the vessels of the convexity of the brain hemisphere. Tubercle bacilli were found in these nodules, the wall of the vessel being converted into granulation tissue.

Frothingham [53] attempted to reproduce in rabbits and guinea-pigs an arterial lesion similar to that found in

44. Poupon, in Progrès méd., 1883, p. 10, quoted by Ransome and Corner (footnote 7).
45. Mason, E. C.: Blood Coagulation, Surg. Gynec. & Obst. **39**: 421 (Oct.) 1924.
46. Howell, W. H.: Textbook of Physiology, Philadelphia, W. B. Saunders Company, 1924, pp. 460 and 463.
47. Cited by Fitz (footnote 48).
48. Fitz, R. H., in Pepper's System of Medicine, Philadelphia, Lea Brothers & Co. **1**: 57, 1885.
49. Cited by MacCallum (footnote 23).
50. Aschoff, L.: Lectures on Pathology, New York, Paul B. Hoeber, Inc., 1924, p. 253.
51. Frothingham, Channing: The Relation Between Acute Infectious Diseases and Arterial Lesions, Arch. Int. Med. **8**: 153 (Aug.) 1911.
52. Hektoen, Ludvig: The Vascular Changes of Tuberculous Meningitis, Especially with Tuberculous Endarteritis, J. Exper. Med. **1**: 112, 1896.
53. Frothingham, Channing: A Glomerular and Arterial Lesion Produced in Rabbits' Kidneys by Diphtheria Toxin, J. M. Res. **30**: 365, 1914.

man. He worked with diphtheria toxin. He used rabbits and injected them with large doses. All died in from forty-eight hours to three days. Microscopic examination of the kidneys showed the glomerular tufts necrotic in places with fibrin deposit in them. The lesion was not identical with the lesion that occurs in human cases, but there was a similarity in that there was a necrosis of the vessel wall plus formation of fibrin.

Klotz [54] reports the findings in fifteen cases in which the patients died of rheumatic fever or with a history of rheumatic fever. Three patients had one attack; four, a recurrent attack, and eight, chronic rheumatism. The site of predilection in these cases he found to be in the ascending limb of the aorta. Here there was an inflammatory exudate about the vasa vasorum of the adventitia, accompanied by degenerative changes of the neighboring cells and elastic fibers.

Kretz [55] reports that in 6,511 cases he was unable to find a single instance in which thrombus formation was not associated with previous infection. Buerger [4] is more conservative. He states that necropsy material would suggest that the infectious process plays a considerable rôle in about half of the cases.

According to James,[56] the toxin of pernicious malaria exerts a specific action on the walls of the cerebral capillaries, softening the endothelial cells and causing the infected erythrocytes to adhere to the capillary walls. Stephens [57] states that in "estivo-autumnal malaria fatty degeneration of the endothelium is apparently a well recognized condition in the cerebral capillaries," but he does not know how far it exists in other parts of the body. Thomson [58] says: "In the human body and also in cultures, as soon as the parasites lose their ring shape—and pigment collects—they clump in masses round the endothelial cells," and that this clumping round the endothelial cells explains their arrest in the capillaries.

REPORT OF CASE OF SYMMETRICAL GANGRENE OF FEET COMPLICATING MALARIAL FEVER

The following case is deemed worthy to report, owing to the fact that only four cases are found reported in the literature, so far as I know, in which the occurrence of symmetrical gangrene is so definitely proved to be of malarial origin:

History.—An American seaman, aged 25, single, white, admitted to the U. S. Marine Hospital, Mobile, Ala., Nov. 19, 1923, had used considerable alcohol in 1920, 1921 and 1922, but not since. He smoked moderately. The family history was negative. He had diphtheria when 8 years old, and had sustained several injuries in childhood, including a fracture of the right humerus and a burn of the left foot. There was no history of venereal disease. He had no trouble in his extremities. He never noted a smoky or bloody appearance of the urine. During the fall of 1923, he was on a voyage in the tropics. He was shipwrecked off Haiti, October 10. After forty-eight hours he was picked up and carried to Santo Domingo, where he stayed for one month. In Santo Domingo, three members of his ship were taken sick with malaria and were sent to a hospital. While in Santo Domingo, he visited the government forts several times and stated that many cases of malaria prevailed there. Eight days before admission to the hospital, he began to feel weak; the next day he had chills and fever; the following day he had fever again. Chills followed by fever continued daily until the arrival of the ship at Mobile. The day before arrival, he became delirious and his feet and legs pained him. On arrival of the ship in Mobile, on the ninth day of his illness, he was brought to the hospital by ambulance in a delirious condition. Five other patients, members of the crew of the same ship, were admitted to the hospital at the same time, all of whom, on microscopic examination of the blood, were found to have malaria; the estivo-autumnal parasite was found in two of them.

Examination.—The patient was poorly nourished and anemic. The temperature by rectum was 36 C. (96.8 F.); respiration, 32; pulse, 106, slightly irregular and of low tension. He was restless and delirious, tossing in bed; he talked incoherently. The pupils were dilated, the sclerotics pale and lemon tinted. The tongue was coated and the breath foul. The skin was clammy and pale. Moist râles were heard over both lungs, especially over the bases posteriorly. A slight systolic murmur was heard best at the apex, but was not transmitted. The heart was not enlarged. The apex beat was in the fifth interspace, 7.5 cm. from the midsternal line. The spleen was only slightly enlarged. The genito-urinary examination was negative. The reflexes were normal. The extremities were cold. The toes were livid and insensitive, and showed dark blebs on the ends. Blebs were also evident on the dorsal and plantar surfaces of both feet. All toes on both feet were involved, the great toes more than the others, and the right great toe more than the left. On the inner surface of the feet near the ankles were irregular, mottled dark areas. On the plantar surface of the right foot was noted an area about 5 cm. long and 5 cm. wide; this area was not raised and was of bluish discoloration. Both feet were cold to the touch, and were swollen. There was loss of pulsation in the dorsalis pedis artery, in both feet. The hemoglobin was 75 per cent; the white blood cells numbered 9,200, of which small mononuclears were 26 per cent; large mononuclears, 6 per cent, and polymorphonuclears, 58 per cent. Ring forms of the estivo-autumnal parasite were found in great numbers; a few crescents were observed. The urine was definitely smoky in appearance; the test for albumin gave a moderate ring; there was no sugar; a few epithelial cells were noted; the specific gravity was 1.020; there were a few red blood corpuscles; there were hyaline and granular casts.

Treatment.—General supportive treatment was administered; fluids were given by mouth, and moist antiseptic dressings, together with heat, were applied to the feet. Quinine dihydrochloride, 15 grains (1 Gm.), was given intravenously shortly after admission and after the diagnosis of malaria had been made; thereafter the quinine, 10 grains (0.65 Gm.), was given intravenously every six hours, for four doses. Following intravenous medication, quinine sulphate was given by mouth, 15 grains three times a day, for four days; later quinine was administered in 5-grain (0.3 Gm.) doses by mouth, three times a day.

Course.—The outstanding features of the disease, at first, were the subnormal temperature and the delirious condition of the patient. In response to the intravenous medication of quinine, the mental condition rapidly cleared. The second day after admission he complained of pain in the legs; on this day the smoky appearance of the urine disappeared; the urine was amber. The pulse gradually fell and became 90 on the fourth day after admission. The temperature rose to 38 C. (100.4 F.) on the fourth day and remained at about this level until the tenth day. This rise was thought to be due to sepsis from the gangrenous condition of the feet. The affected areas of the feet became black, and were icy cold to the touch. The blebs broke, leaving exposed surfaces. A definite line of demarcation later developed, the tissues appearing somewhat red and mottled in the area on the proximal side of the line.

December 18, thirty days after admission, the urine was acid and of amber color; there was a trace of albumin, but no sugar; the specific gravity was 1.013; there were a few red blood cells and a few hyaline and granular casts. The hemoglobin was 80 per cent; white blood cells numbered

54. Klotz, O.: Arterial Lesions Associated with Rheumatic Fever, J. Path. & Bacteriol. **18**: 259, 1913-1914.
55. Kretz, quoted by Buerger (footnote 4, p. 127).
56. James, W. M.: Proc. Internat. Conference on Health Problems in Tropical America, p. 67.
57. Stephens, J. W. W.: Proc. Internat. Conference on Health Problems in Tropical America, pp. 127 and 71.
58. Thomson, J. G.: Proc. Internat. Conference on Health Problems in Tropical America, p. 132.

9,000; red blood cells, 4,035,000. The differential count gave: small mononuclears, 33 per cent; large mononuclears, 3 per cent; polymorphonuclears, 64 per cent. A blood smear was negative for malarial parasites. The Wassermann test of the blood was negative. The general condition of the patient was greatly improved. The heart murmur had disappeared. The right great toe showed dry gangrene, a distinct line of demarcation being present at the metatarsophalangeal joint; the plantar surface showed an area of dry gangrene approximately 5 cm. in diameter. The distal phalanx of the great toe and tip of the third toe of the left foot showed some evidence of dry gangrene. Both feet were sensitive to the touch except in the area of gangrene. The patient complained of pain and tingling in both feet.

Jan. 15, 1924, fifty-six days after admission, the right great toe was black and mummified. It was amputated at the metatarsophalangeal joint. Chemical examination of the blood showed normal findings: blood sugar, 74 mg. per hundred cubic centimeters of blood; nonprotein nitrogen, 26 mg., and urea nitrogen, 13 mg. A kidney function test, 1 cc. of phenolsulphonphthalein being given intramuscularly, showed 40 per cent excretion in two hours. The urine still showed a trace of albumin, a few red blood cells, and a few hyaline and granular casts.

February 13, eighty-four days after admission, urinalysis was negative. The albumin had completely disappeared. A kidney function test (phenolsulphonphthalein) showed 60 per cent excretion in two hours. A Wassermann test of the blood was negative.

February 24, three months and five days after admission, the patient was discharged from the hospital in good physical condition. The feet had completely healed, except for a tingling sensation on walking.

The diagnosis was: estivo-autumnal malaria of the delirious pernicious type; symmetrical gangrene of both feet; acute nephritis, and hemoglobinuria.

COMMENT

That the disease in this instance was pernicious malarial fever is beyond question. The three pathognomonic signs of malaria as enumerated by Manson were evident: periodicity, effect of quinine, and the presence of the malarial parasite. The ring forms of the estivo-autumnal parasite were found in profusion in the red blood cells; also a few of the more mature organisms in the shape of rounded crescents.

There arises for consideration the coincident occurrence of malaria and so-called Raynaud's disease existing as separate and distinct entities. A careful history revealed the fact that there had been no prior trouble in the extremities as regards pain, blanching or cyanosis. There was no history of interrupted or intermittent paroxysms, simulating or suggesting Raynaud's disease. No members of the family were similarly affected. The patient was well and healthy until nine days before admission to the hospital, and he was pursuing a gainful occupation without pain or discomfort in his extremities or elsewhere in his body.

The occurrence of acute nephritis as a complication of malaria has not been unusual. Osler and McCrae [38] report the occurrence of acute nephritis in more than 4.5 per cent of patients suffering from estivo-autumnal fever.

The hemoglobinuria in this case was undoubtedly due to the parasite causing pernicious malarial fever. It will be noted that hemoglobinuria existed before quinine was administered, and the patient had received no quinine prior to admission to the hospital. As shown by de Blasi,[59] Brem [59] and Zeiler,[59] the malarial parasites give rise to a hemolysin which probably varies in quantity and quality with different strains of parasites; this is kept in check by the action of antihemolysin, which is formed in the body, but under certain circumstances may fail to be produced in sufficient quantity, so that hemoglobinemia with hemoglobinuria may occur. Stephens,[57] in discussing the cause of hemoglobinuria, states that until the presence of a hemolysin can be negatived by good evidence, we may adopt this as a provisional hypothesis.

The absence of pulsation in the dorsalis pedis arteries eliminates the existence of symmetrical gangrene of the Raynaud type due to vasoconstriction. Such absence of pulsation points to either embolism or thrombosis. From the facts presented, however, we may assume that thrombosis is the most probable causative factor.

The gangrene was not due to embolism associated with heart disease. There was no evidence of heart disease in this case. A slight systolic murmur heard at the apex was clearly functional.

Gangrene due to chemicals and drugs was excluded.

Traumatism was excluded as a cause of gangrene.

Syphilis was eliminated as a cause of gangrene. There was no history of syphilitic infection; the Wassermann test was negative on three different occasions. There was no adenopathy or other evidence of syphilis.

Gangrene from heat or cold was eliminated.

Senile gangrene was eliminated on physical examination and on the symmetry of the lesions.

Diabetic gangrene was eliminated on the laboratory findings. The urine was negative for sugar; examination of the blood showed blood sugar to be present in the amount of 74 mg. per hundred cubic centimeters of blood.

Thrombo-angiitis obliterans was eliminated on the history of the case, because of the absence of intermittent claudication, the absence of migrating phlebitis, the absence of a steady progressive course and the absence of redness.

Polyneuritis, as seen in beriberi, was eliminated on the history, because of the sudden occurrence of the gangrene, the absence of hyperesthesia and the presence of the patellar reflexes.

Erythromelalgia was eliminated because of the absence of bounding arterial pulsations, the absence of redness and the absence of a burning sensation in the feet.

Syringomyelia was eliminated by the onset being sudden rather than insidious, the absence of muscular atrophy, absence of sensory dissociation, and the symmetry of the lesions.

CONCLUSION

From the facts presented, this was an unquestioned case of symmetrical gangrene caused by estivo-autumnal malaria, in which unusually favorable results followed specific intravenous therapy.

59. Cited by Castellani and Chalmers (footnote 11).

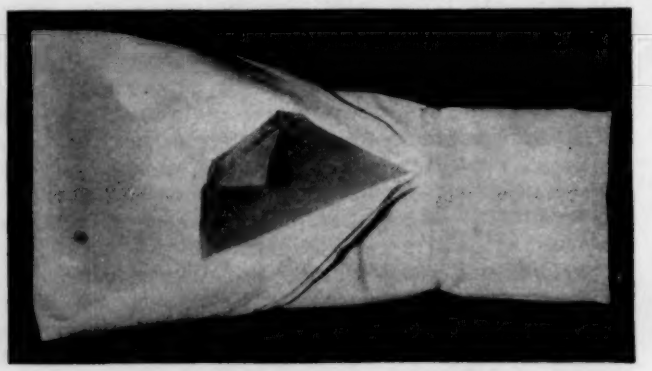
Development of Psychologic Conception in Medicine.—The actual historical line of development of the pyschological conception in medicine has its roots, though hardly its logical ancestry, in the seventeenth century views and practices with regard to animal magnetism, and the personal power of healing. The ground for this statement is that, although none of these procedures were employed as the result of a psychological conception of disease or of therapy, and none of them form part of the actual building of psychopathology, yet they led to the observation of certain phenomena which were ultimately incorporated in the conception of suggestion, the conception which may be regarded as the foundation stone of modern psychopathology.—Hart, Bernard: *Lancet* **1**:587 (March 20) 1926.

Clinical Notes, Suggestions and New Instruments

STERILE PAPER TOWELS FOR SURGICAL WOUND DRESSINGS *

JOHN HOMER WOOLSEY, M.D., SAN FRANCISCO.

Aseptic technic in the dressing of wounds is of prime importance, and is often poorly executed. For use in a surgical clinic, office or where sterile instruments and dressings are kept in bulk, the use of an "individual service sterile towel" is an excellent method. The employment of the usual linen towel is expensive, and demands considerable laundry work and renewal from the constant washing. The ordinary paper towels of rather coarse fiber are excellent and inexpensive substitutes. They can be separated from one another and stacked with one corner of the closed side folded, so as to form an easy method for extraction later. The towels are then put in a hospital towel envelop and sterilized under steam pressure. When they are needed, one end of the envelop is unpinned and opened, as shown in the illustration. Each sterile



Envelop of sterile paper towels opened ready for use.

towel may then be withdrawn, opened, and the sterile dressings and instruments put out on the sterile field, ready for the individual patient or wound. The paper towel, when used, is discarded, perhaps even with the soiled dressings folded inside.

490 Post Street.

UNIQUE HEART ANOMALY: FREE FIBROUS CORD PASSING THROUGH THREE HEART CHAMBERS TO THE AORTA †

J. L. GOFORTH, M.D., PHILADELPHIA

This interesting necropsy finding is recorded primarily because of its uniqueness. Various unusual heart abnormalities are described in the literature, but our search for conditions similar to or like this one has been in vain; as far as we can determine, this anomaly is the only one of its kind on record.

A white woman, aged 23, came to necropsy with a clinical diagnosis of postpuerperal psychosis. The history, clinical course, and the other necropsy findings are of no consequence and are omitted. According to Dr. J. F. Stauffer of the Philadelphia General Hospital, on auscultation there was a gallop rhythm, and, at the apex, a "sort of to-and-fro murmur which sounded like a cross between a friction rub and a murmur" was heard, which could not be definitely timed because of tachycardia. Pericarditis was suspected.

The heart weighed 300 Gm.; it was of normal size and shape, and showed slight rightsided dilatation. The pericardium and epicardium were not remarkable. The coronary vessels were normal. The auricular and ventricular walls were of normal thickness, and the myocardium was of normal color and consistency. The endocardium and valves presented no organic lesions. The mitral valve, particularly the anterior leaflet, showed slight thickening along its line of closure, but was everywhere smooth and shining. The aortic cusps were not remarkable, except as described.

Fig. 1.—Origin of cord in right auricle and its course to the annulus ovalis.

Arising from the right auricular wall 1.5 cm. from the annulus ovalis, a tiny, grayish-white, rounded, threadlike, smooth, glistening cord, 0.5 mm. in diameter, ran freely and unattached toward the slightly patent foramen, and, near the

Fig. 2.—Course of cord from annulus ovalis through left auricle and mitral orifice into left ventricle. The cord is considerably shortened from shrinkage resulting from fixation in formaldehyde.

lower rim of the annulus ovalis, apparently obliquely pierced the interauricular wall. Attached to the annulus ovalis, near its inferior margin in the left auricular wall, it traversed the left auricle and, following the course of the blood flow, passed down through the mitral orifice well into the left

* From the Department of Surgery, University of California Medical School.

† From the Laboratory of Morbid Anatomy of the Philadelphia General Hospital.

ventricle. Here it turned, and, forming a parabola-like curve around the anterior mitral leaflet, but sufficiently below it so as not to interfere greatly with its function, apparently, proceeded toward the aortic valve. As it approached the anterior cusp, it perpendicularly pierced it and attached itself to the wall of the aorta, 8 mm. beyond, thus virtually transfixing this cusp. It was as though a suture had been started

Fig. 3.—Course of cord from curve in left ventricle to aortic valve. Penetration of cusp and point of attachment on aortic wall may be noted. The cord was sectioned in the sinus of Valsalva in the routine performance of necropsy. The proximal portion can be seen in the sinus of Valsalva in the right of the illustration, and the distal portion appears as a small darkened projection near the left border of the aorta.

in the right auricular wall and had been passed through the course of the fetal circulation, finally ending in the aortic wall, after penetrating the aortic valve. The cord tended to increase in size as it progressed: in its course through the left auricle and ventricle, it increased from 0.6 mm. to 2 mm. in diameter; it was thickest in its curve around the mitral leaflet, reaching a diameter of 2.5 mm. in this section. As it approached the aorta it again became smaller, averaging not more than 0.5 mm. as it pierced the cusp. The entire cord was about 12 cm. long; 1.5 cm. from its origin in the right auricle to the annulus ovalis; 5.5 cm. from the annulus ovalis to the curve in the left ventricle; 4 cm. from the curve to the aortic valve, and 8 mm. from the cusp to the aorta. It was rounded throughout its course, and on palpation was firm and solid, but easily pliable.

HISTOLOGIC STUDY

Hematoxylin and eosin, Mallory's aniline blue stain for fibrous tissue, and Weigert's elastic fiber stain preparations of both transversely and longitudinally cut sections, taken from blocks at different levels of the thickest portions of the cord, showed closely packed bundles of wavy, collagenous fibrils running longitudinally in the main, although a few took a circular course. An occasional flattened endothelial cell was observed on the outer surface. Transverse sections of the portion of the cord that had pierced the aortic cusp showed essentially the same picture; the dense fibrous tissue here tended to arrange itself in a sort of laminated fashion. Transverse sections taken through the auricular attachment of the cord showed a zone of fibrous tissue beneath the endocardium, gradually increasing in thickness as the cord was approached, and finally becoming a part of the cord. Sections through the aortic attachment showed an area of dense fibrous tissue, irregularly arranged, and apparently not intimately connected with the aortic wall tissues, beneath the endothelial coat of the intima. It appeared as though the cord had its roots in the auricular wall and was only superficially attached to the aortic wall. In no section was there any evidence of cardiac or smooth muscle tissue, elastic tissue, or Purkinje's fibers. Microscopically, then, the cord was composed of dense fibrous tissue, and was covered by a thin endothelial membrane.

COMMENT

An explanation for this anomaly is hardly possible. The points of attachment and course of the cord suggest that it might have been formed in the right auricle during fetal life in association with some irregularity in the fetal circulation, and, as a gradually lengthening process, passed through the foramen ovale and the aortic cusp before their development was complete. It would then be thought of as a fibrin-covered projection, constantly receiving more fibrin, which was slowly converted into fibrous tissue, until it became anchored in the aortic wall. Such an explanation is admittedly fantastic. There was nothing in the structure of the cord to indicate definitely its formation embryologically, yet its origin as a developmental anomaly seems the most probable. Histologic study refutes a parasitic origin of the cord, an origin that might possibly be suggested because of the superficial resemblance of the cord to a parasitic worm, grossly.

Clinically, the heart sounds were interesting. The presence of the cord in the blood stream probably served as an obstruction, however slight, to the blood flow. The looping of the cord around the anterior mitral leaflet, although redundant, may have handicapped to some degree its function, and the piercing and transfixion of the anterior aortic cusp no doubt interfered with its action. The peculiar sounds heard on auscultation may, perhaps, thus be accounted for.[1]

Thirty-Fourth and Pine streets.

A FAMILY OF SQUINTERS*

FRANK H. RODIN, M.D., SAN FRANCISCO

Four cases of strabismus in one family are sufficiently rare to justify this report.

Mrs. C. S., aged 46, seen at Stanford University Eye Clinic, July 14, 1925, had had fourteen children, nine of whom were living. Her right eye had always turned out. The eldest six living children and her husband have straight eyes. The

Four squinters in one family.

eyes of the youngest three children turn in. These children were of normal birth and always healthy. The mother had always enjoyed good health. As far as can be ascertained, there is no history of strabismus on either the maternal or the paternal side of the family.

1. In a personal communication, Dr. Maude E. Abbott states that she has never seen an anomalous cord to this extent or location in the heart. In reviewing the anomalies of the heart in Osler's Modern Medicine (4: 353-355) Dr. Abbott cites several cases showing aberrant and anomalous chordae, the nearest approach to our case being one that extended from the left auricle to the left ventricle through the mitral orifice.

* From the Department of Ophthalmology, Stanford University Medical School.

Retinoscopy of the mother and the children was done under atropine mydriasis. The examination of the fundi in all these cases was negative. Lenses did not improve their visions nor straighten out the eyes.

Examination of the vision of Mrs. C. S. revealed: O. D. = hand movement; O. S. = 20/30. Retinoscopy: O. D. + 2.00 ⊃ + 2.00 axis 90°; O. S. + 2.00 S. There was a right divergent strabismus, the right internal rectus muscle being very weak.

The eldest of the three children was a boy, aged 12 years. The right eye had been turning in since 2 years of age. Vision: O. D. = 20/30; O. S. = 20/30 part. Retinoscopy: O. U. + 5.00 S. In a postmydriatic test, the patient accepted only O. U. + 0.75 S. There was an alternating convergent strabismus of 30 degrees by the arc test, the left eye being the fixing eye.

The second child was a girl, aged 9 years. The right eye had been turning in since 2 years of age. The right pupil was larger than the left. Vision: O. D. = 20/200; O. S. = 20/40. Retinoscopy: O. D. + 4.00 ⊃ + 1.00 axis 135°; O. S. + 4.00 ⊃ + 1.00 axis 45°. Postmydriatic test: O. D. did not accept any lens; O. S. accepted + 1.00 S. By the arc test: right convergent strabismus 30°.

The youngest child was a girl, aged 6 years. The left eye had been turning in since 1 year of age. The child was too young for recording vision. Retinoscopy: O. U. + 5.50 S. By the arc test: left convergent strabismus 30°.

CARDIOSPASM AND CONCOMITANT ESOPHAGEAL DIVERTICULUM

JOHN H. FITZGIBBON, M.D., PORTLAND, ORE.

As the occurrence of either cardiospasm or diverticulum of the esophagus is relatively infrequent, the existence of the two conditions in the same individual is rather unusual.

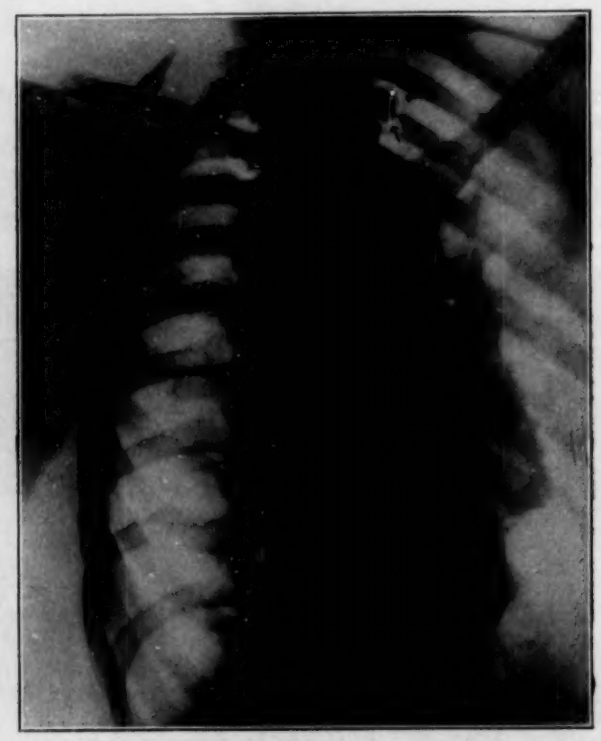


Fig. 1.—Cardiospasm and diverticulum.

Dessecker[1] states that, in eight cases of diverticulum of the lower third of the esophagus, cardiospasm was found in five; and he believes that even when it is absent, a careful history may reveal symptoms of spasm at some time. The accumulation of food in a spot weakened congenitally, or by traction from cicatrices, is thought to be a causative factor. A further contributing factor, he believes, is the negative pressure of air in the thorax as affecting that in the esophagus. Vinson[2] has reported two cases of diverticulum of the middle third of the esophagus associated with cardiospasm.

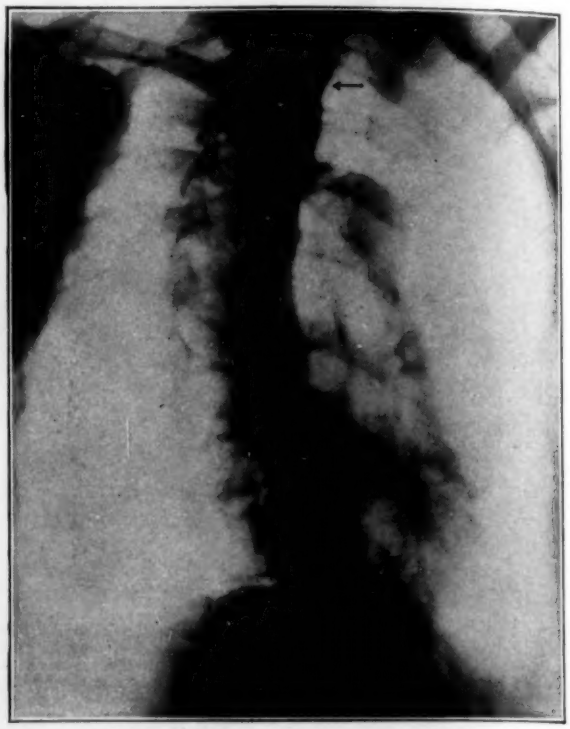


Fig. 2.—Barium residue in diverticulum.

The case here reported presents the very unusual condition of pulsion diverticulum of the upper end of the esophagus with concomitant cardiospasm.

REPORT OF CASE

O. L. C., a man, aged about 40, seen in December, 1924, had had difficulty in swallowing for fourteen years. The location of the obstruction was described as at the lower end of the esophagus. A stomach tube or esophageal bougie could be passed into the stomach with little difficulty, but the patient swallowed cold water with marked effort.

Fluoroscopic examination confirmed the diagnosis of cardiospasm, and, in addition, revealed a small diverticulum of the upper end of the esophagus, which was evidently of the pulsion type. Roentgen-ray films showed the pouch extending beyond the left border of the esophagus (fig. 1). As the esophagus emptied, a residue of barium could be seen remaining in the diverticulum (fig. 2).

All symptoms were referred to the cardiac end of the esophagus, and the diverticulum was apparently not causing difficulty. After the patient had swallowed a silk thread guide, the cardia was dilated with a Sippy air bag dilator. This was followed by marked improvement, and the patient has, so far, not reported for further treatment.

COMMENT

This case is of interest only because of the rarity of the condition, for the diverticulum is apparently too small to cause much difficulty in swallowing. In similar cases found in the literature, the diverticula have been of the middle or lower third of the esophagus.

Stevens Building.

1. Dessecker: Das epiphrenale Pulsionsdivertikel der Speiserohre, Arch. f. klin. Chir. **128**: 236, 1924.

2. Vinson, P. P.: Cardiospasm Associated with Esophageal Diverticula, New York M. J. **117**: 540, 1923.

A NEW DUODENAL TIP

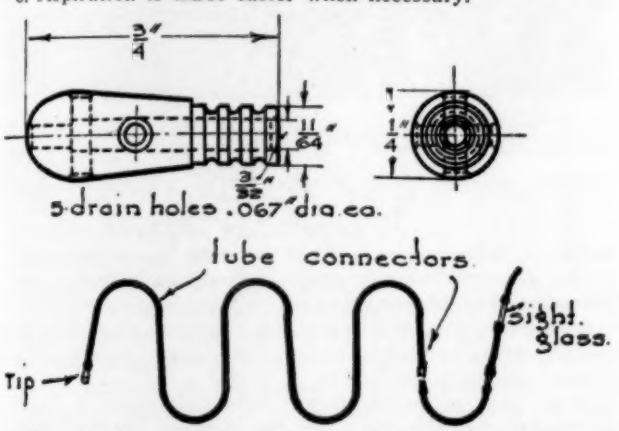
CARL V. VISCHER, M.D., PHILADELPHIA

After having used a number of the standard duodenal tubes, such as those of Jutte, Rehfuss, Lyon and Einhorn, with the aid of my brother and associate, Dr. Thomas J. Vischer, I designed a duodenal tip as shown in the accompanying illustration.

The tip is ¾ inch (2 cm.) in length, ¼ inch (0.6 cm.) in diameter, 11/64 inch at the threaded end and the caliber, 8/32 inch. There are five drain holes placed as shown in the illustration, each 0.067 inch in diameter and countersunk. The tip may be used on any standard tube. We have used the tip on both the Jutte and Rehfuss tubes. It weighs exactly 2.75 Gm.; it is made of German silver and is double gold plated.

After having constantly used the tip over a period of time, I have noted the following advantages:

1. The tube is more easily introduced; it is never necessary to use wire.
2. There is less discomfort to the patient in swallowing.
3. More rapid passage into the duodenum is obtained.
4. The tube may be introduced through the nostril.
5. There is better drainage with less obstruction by mucus.
6. Aspiration is made easier when necessary.



Above, side view and cross-section of duodenal tip; below, tip connected with tube.

The Vischer duodenal tip is manufactured by Richard Young, instrument maker, Fifteenth Street, above Race Street, Philadelphia.

5903 Greene Street, Germantown.

A NEW TIP FOR GASTRODUODENAL TUBES

MOSES EINHORN, M.D., NEW YORK

I delayed the announcement of my new tip for gastroduodenal tubes in order first to convince myself that it possessed decided advantages on the tips already in use. I am now in a position to state that I have used the tip on a number of my private patients and also on patients in the dispensary of Mount Sinai Hospital, and find that it takes from one third to one half less time to enter the duodenum, as compared with other tips used on the same patients.

The tip, shown in the accompanying illustrations, is 27 French in diameter, 10/8 inches in length, of capsule shape, with an obtuse point, and has three divisions: (*a*) the top, made of nickel, through which a large opening is bored, which serves as an outlet for the drainage chamber to the tube which is attached to the neck of the capsule; (*b*) the spiral, made of round metal wire, which connects the top to the body, and by its circular arrangement offers a large drainage area; (*c*) the bottom, made of solid lead, and connected with the top by the spiral, and also by a wire which runs diagonally through the drainage chamber.

The construction of my tip is based on principles which make it ideal in gastroduodenal intubation and drainage, for the following reasons:

1. The swallowing of the tip is accelerated because of its capsular shape and its heavier weight, which is sufficient to permit the passage of the tube through the esophagus with a minimum of discomfort to the patient.

2. The tip maintains its intended course along the stomach pathway because of its weight, which is 170 grains (11 Gm.), and its proper arrangement, its distal end being made of solid

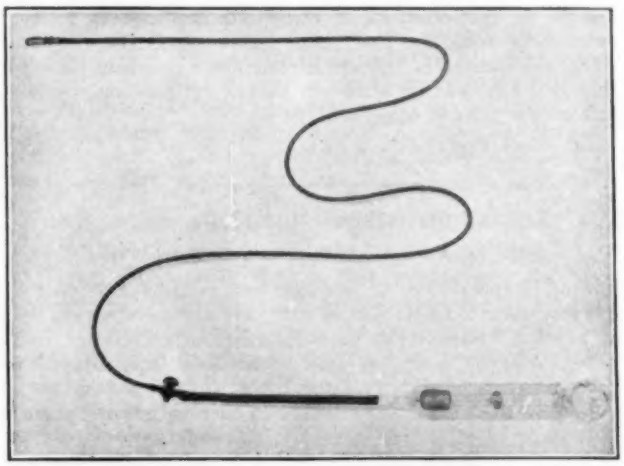


Fig. 1.—Gastroduodenal apparatus with tip in place.

lead three times heavier than the upper part, which aids it to travel along the small curvature and keeps it in proper place in its progress toward the pyloric opening.

3. The entrance of the tip into the doudenum is accelerated: (*a*) by placing the patient in a reclining position on the right side, with the right leg and knee stretched straight, and the left leg and knee flexed, overlapping the right, thus bringing the duodenum lower than the stomach; (*b*) by injecting a small amount of lukewarm water through the tube, which will relax the pyloric opening and stimulate the peristalsis of the stomach; (*c*) by having the patient swallow the last 7 inches (18 cm.) of the tube slowly, over a period of from ten to fifteen minutes, which assists the progress of the tip along the stomach pathway.

Fig 2.—Appearance of tip.

4. The large drainage chamber permits the extraction of pieces of mucus and juice, and also permits a continuous drainage of the tube. This is accomplished by the openings formed by the circular spiral, which promotes drainage from all sides.

5. There is minimum injury to the mucous membrane of the stomach and duodenum, either in course of drainage or on withdrawing the tip; this is accomplished by having the spiral made of round metal wire and the upper edge of the bottom of the tip smoothly beveled.

Comparison of Tip with Others Now in Use

Length, inches	6/8	7/8	8/8	9/8	10/8
Weight, grains	104	59	83	72	170
Diameter, French	34	23	29	27	27

The tube should be of semisoft quality, to lessen the possibility of knotting and bending.

The tube is 12 French in diameter, semisoft in quality, and 50 inches (127 cm.) in length. It is divided by heavy lines, one line being placed 20 inches (50 cm.) from the tip; two lines, 27 inches (70 cm.) from the tip; and three lines, 34 inches (85 cm.) from the tip. At the end of the tube, I

introduced a rubber stopcock, which is very useful, particularly after the injection of magnesium sulphate used in the course of drainage, as it does not permit of dripping, and also in fractional methods for gastric contents.

Important points to remember during the intubation are:

1. The tube should never be introduced farther than the first heavy line, which is 20 inches from the tip, before placing the patient on the right side.

2. After the drainage is completed and one is ready to remove the tube, the first seven inches should be withdrawn while the patient is still in a recumbent position; only then should the patient be placed in an upright position, while the rest of the tube is being withdrawn.

286 West Eighty-Sixth Street.

EMBRYONIC MIXED TUMOR OF THYROID*

J. WARREN BELL, M.D., PH.D., EVERETT, WASH.

Mrs. H. presented herself for examination believing she was pregnant. Examination revealed a distended abdomen, in which no fetus could be palpated. Catheterization of the bladder secured a few ounces of normal urine. The roentgen ray revealed an hydramnios with outlines of a fetal skull visible. The skull did not appear as large as a full term fetus, though the abdomen was as large as is usual at term. The patient was put to bed and the hydramnios diminished slightly, but in spite of rest and sedatives she went into labor prematurely, with a discharge of considerable amniotic fluid.

Fig. 1.—Appearance of fetus, showing tumor of thyroid.

I arrived just in time to assist in extracting by the feet the fetus shown in the accompanying illustration. The child breathed spasmodically a few times and then stopped. The mother had a prolonged convalescence, owing to the assumption of household duties before she was strong enough for this responsibility.

A roentgenogram of the specimen showed no evidence of bone formation in the tumor.

Dissection of the abdomen and thorax showed the viscera in normal position and of normal appearance. The tumor was so large that we considered several sources of origin, but the anatomic relations proved by dissection that it was from the thyroid alone. The tumor was quite firm, slightly elastic and heterogeneous in appearance on section. On microscopic section the tissue would not be identified as thyroid on casual observation. The various sections differed from one another.

The first microscopic section showed a definite piece of cartilage. The second microscopic section showed a tubular area, while the third section showed embryonic tissue.

DIFFERENTIAL DIAGNOSIS

When we refer to the literature we find that Hertzler[1] includes under tumors of the thyroid the following:

1. Adenoma: (*a*) fetal; (*b*) tubular.
2. Thyroid cysts.
3. Carcinoma.
4. Sarcoma: all cell types.
5. Rare tumors: (*a*) fibromas; (*b*) lipomas.

Scudder[2] pictures a series of tumors which bear some resemblance to the gross appearance of the tumor in our case. They are lymphangiosarcoma (unilateral aspect), periosteal osteosarcoma of lower jaw (unilateral), large

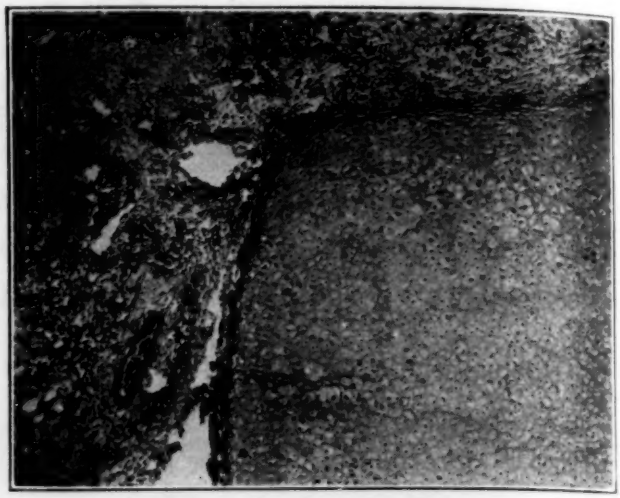


Fig. 2.—Microscopic section showing area of cartilage.

fibroma, osteofibroma, dentigerous cyst, adamantine epithelioma, and carcinoma.

Gaylord and Marsh,[3] in their work with salmonoid fishes, picture massive tumors in trout, of gross appearance similar to our tumor. The microscopic appearance of such tumors shows considerable variation.

Gardner[4] gives us a picture of a teratoma (always congenital) of the thyroid and also of a multiple cystic lymphangioma (usually congenital).

In our case, exact diagnosis is impossible except by careful microscopic examination, since the roentgen ray revealed no

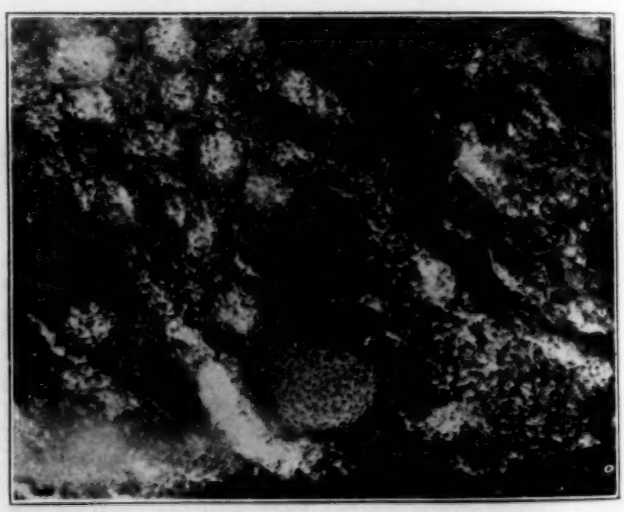


Fig. 3.—Microscopic section showing embryonic tissue.

bony elements in the tumor. Because of the size of the growth and the feebleness of the child, this tumor could not have been successfully removed.

Medical and Dental Building.

* From St. Mary's Hospital, Minneapolis.

1. Hertzler, A. E.: A Treatise on Tumors, 1912, p. 380.
2. Scudder, C. L.: Tumors of the Jaw, 1912, pp. 69, 123, 140, 141, 155, 188, 189, 275.
3. Gaylord, H. R., and Marsh, M. C.: Carcinoma of the Thyroid in Salmonoid Fishes, 1914, figures 27, 38, 48, 49, 62.
4. Gardner, R. E.: Iconograms, 1913.

Special Articles

RELIGIOUS HEALING

PRELIMINARY REPORT

ALICE E. PAULSEN, PH.D.
NEW YORK

(Continued from page 1524)

SCIENTIFIC CHRISTIANITY

Christianity to some is distinctly a healing movement. Applied Christianity, they believe, is capable of removing every difficulty in the world. Especially is it applicable to physical disease. Christ preached faith, and those who apply the Gospel teachings to the healing of the body lay stress on this mental state. They have developed systems by which the patient's mind becomes imbued with the idea that by communion with God he may be healed, and also teach methods by which this communion may be effected. The material used to develop these ideas is taken from the Scriptures and from the writings of various New Thought authors. The system usually consists of daily reading along these lines, meditation on certain appropriate thoughts, relaxation and affirmative prayer. Treatment consists of relaxation, reading or listening to an appropriate passage of Scripture, affirmation or silent prayer.

The most highly organized movement of this nature is Unity, Scientific Christianity. Kansas City is the headquarters for this movement. It publishes a magazine called *Unity*, which has a circulation of about 185,000. This contains news of interest to the various centers, which are established throughout the country in the form of prayer groups, discussions of the teachings of the gospels as interpreted by the leaders of the movement, testimonials of results obtained by various members through the application of their principles, and other matter. Lecturers are sent out from headquarters to organize guilds in communities, and a prayer service is maintained at the larger centers. It is said that through its literature, lecturers, guilds, practitioners and prayer service the Unity Society reaches from three to five million people yearly.

The following testimonials, quoted from recent issues of *Unity*, indicate the type of response to the prayer service provided at the Kansas City headquarters:

HEALTH

Peoria, Ill.—I am thankful to you for the healing of my son. His arm was suddenly and completely healed. He did not know that I had written to you for help.—Mrs. W. C. H.

Cleveland, Ohio.—I wrote you asking that I might be healed of diabetes and gallstones. I am thankful to say that I have been healed.—Mrs. M. B.

Lorraine, Kan.—Our daughter has had an operation and the doctors said that she could not live. I asked Jesus to heal her, and I sent a telegram to *Unity*. She began to improve immediately. The doctor said that her recovery was a miracle. I thank God that she is alive and well today.—Mrs. W. E. B.

PROSPERITY

Kansas City, Mo.—I wrote you asking for prayers to assist me in renting vacant apartments. Each day I faithfully held the thought that you sent me and all the apartments now are filled.—A. L. M.

East Orange, N. J.—I have made a business connection which has promise far beyond any hopes that I entertained when I wrote you for prayers. May God bless you in your wonderful work.—C. F. B.

New York.—Wonderful things have happened since I wrote to you. I was then out of work. Now I am in my old position, and have had a raise in salary.—M. T.

MISCELLANEOUS

Hot Springs, Ark.—Find enclosed $50, my tithe. Your literature has helped me more than I can possibly express. There was a dreadful hailstorm here and my car happened to be sitting out in the front yard. Lumps of ice larger than a hen's egg fell thick and fast. I placed everything of mine in the Lord's hands. None of my property was damaged, while all around there were battered roofs, broken windows and damaged cars. I did not forget to thank God for his protection.—Mrs. A. W. C.

Tithing is the method of reimbursement used. In a booklet published by the Unity Society entitled "Tithing," an interesting history of this method is given from the time of its appearance in the Mosaic law. From the earliest times it has been the custom for those who observe tithing to give 10 per cent of their possessions to the Lord, and it is a matter of common belief that those who do this will prosper.

The eastern representative of the Unity Society is Mr. Richard Lynch. Mr. Lynch was himself an invalid for the greater part of his life until he discovered how to heal through applying the methods which he now teaches. He talks to large audiences almost daily. The topics of his lectures include such subjects as health, happiness, prosperity, character formation and personality. Mr. Lynch also carries on some private practice in healing, and conducts services attended by an enthusiastic following on Sunday mornings. At the registered class lectures, Mr. Lynch's audience usually numbers from 300 to 500 people. He started in New York with only six people, three years ago. There are ten registered practitioners connected with the New York headquarters, and an emergency prayer service is also maintained there. Followers of this school, after a short experience with the success of its methods, prefer them to those of medicine, and voluntarily dispense with the latter in order to strengthen their faith. But Unity practitioners, like all New Thought practitioners, do not demand that they do so, and do not withdraw their services if the patient wishes to consult a physician as well.

VARIOUS OTHER SIMILAR MOVEMENTS

New Thought and Christian Science are types of the same idea expressed in somewhat different ways, though by methods fundamentally similar, however different they may be in detail. Christian Science represents what is known as an "absolute" system, while most New Thought movements represent a comparatively "relative" system. There appear to be innumerable other systems more or less like the one or the other in that they are more "relative" or "absolute" in nature. They differ in their method of treatment, some treating "silently," some "audibly," some making their appeal through excitation, others through relaxation.

One of the most extensive movements using excitation and audible treatment is the Rawson school, founded by the late F. S. Rawson in 1919. His work is being carried on by more than a hundred practitioners in this country, who treat for success, happiness and health by a system consisting of vehement negation of the undesirable and affirmation of the desired. By attuning his mind in this way, the individual is enabled

to "manifest" and to "demonstrate." It is said by Rawson followers to be the highest system of thought, and they are enthusiastic in their declarations as to its practicability.

In the philosophy of Burnell, we have a system of absolute thought. The follower of this system of philosophy and thought meditates on such axioms as these:

> I know that I am because I cannot say I am not. Therefore Being or Is-ness, or Consciousness, or Self, must be Truth.
>
> Truth is that which Is, and as there cannot be that which is not, therefore that which is, or Truth, must be all there is.

The individual becomes conscious of truth, perfection, cosmic consciousness. His mind, comprehending perfection, reflects perfection; and, even as his mind, his body becomes perfect.

SPIRITUALISTS

The spiritualist movement has a firm hold in New York. There are said to be many smaller circles which meet in private homes and there are at least twenty comparatively well organized societies whose services are advertised in the Sunday newspapers as open to the public. Attendance appears to vary from about fifteen to 100 people, depending on circumstances. Healing is frequently a part of the services, and some of the church "pastors" give private consultations.

It is believed that sickness is due to demoniacal possession, and the purpose of the healing service is to drive out the evil spirit. This can be accomplished in various ways.

The individual himself may so conduct his life that the evil spirit will of its own accord depart, since all evil spirits succumb when faced in the name of Christ. Or a group of individuals, gathered to worship the greatest spirit, God, may thus invite beneficent spirits, who will overcome the evil spirit and cause him to depart.

Another method consists in availing oneself of the services of a medium, who, being guided by the spirits of certain departed ones who were authorities on this earth, goes into a trance during which he or she lends his or her body to these spirits that they may speak to the patient and advise him what to do.

Still another method is that used by Titus Bull, M.D., a colleague of the late Professor Hyslop, who believes that it is possible to demonstrate that certain types of insanity are due to the presence of evil spirits. Dr. Bull is using a medium in his practice. His method is to transfer the evil spirit from the patient to the medium and to educate it by persuasion. This is accomplished through long conversations, sometimes taking the form of serious debates. The doctor is guided in his work by the spirits of a group of famous scientists. He is thoroughly convinced that exorcising a demon results only in passing it on, and has therefore followed the educational method in his practice, for by educating the evil spirit his influence for evil may be overcome once and for all.

Exorcising is a more common method. I witnessed a series of healing services at a certain negro church in which this method was used amid considerable emotional demonstration. It consists of performing certain mesmeric passes in order to gain control over the spirit, and then commanding it to depart.

It is considered necessary for those who would be successful healers to live lives of great self denial and saintliness in order that they may command evil spirits and that these spirits may have no power over them. The patient also must take heed to his morals in order that he may be completely cured and remain well. He must make himself an unsuitable host for an evil spirit.

If a person is sufficiently saintly, it is believed that evil spirits vanish at his approach, and he may effect instantaneous cures in some cases by merely touching the sufferer. Dr. Bull states that he is forced to make all sorts of sacrifices in order to maintain his power. He also states that he is able to cure certain conditions by placing his hands on the patient. However, he is using the medium and taking notes on the exact details of the procedure in most instances in order to perfect the method for the use of others who may wish to use it and to obtain recorded data on which he hopes to base proof of his contentions.

THEOSOPHY

Certain forms of Theosophy include healing in their services. The method may be that of the spiritualists or it may make use of telepathy. In the latter case, it is believed that the patient is helped by the concentration of the thought of all those present. Each attempts to realize health for him. The patient himself assumes a rather passive attitude and believes himself to be the recipient of power thus directed to him.

Neither Theosophy nor Spiritualism, however, deals with health primarily, nor are these societies definitely organized in any way for that express purpose. Nevertheless, many of their members believe that they are benefited through such healing services, and seek such help from their leader or fellow members when they are ill. Compensation is on the basis of free will offering as a rule, although among the spiritualists there is a minimum charge of fifty cents in some cases.

This completes the discussion of organized movements independent of the church. There is yet to be considered the work of certain scattered individuals who are applying religion to the readjustment of unfortunates of one type or another who come to them for help. Some of these are individuals who believe that they have themselves been cured through faith. Many of them state that they were invalids or maladjusted in some way until religion became a unifying influence in their lives. Some have long medical histories, and not a few were definitely given up as incurable by their physicians.

By chance or through the influence of another they have succeeded in curing themselves. Their system consists of close study of the teachings of Jesus, an attempt to realize completely the import of his message, and an effort to live a truly Christian life, with all that it implies. With this realization comes a certain release from strain and a willingness to cast one's burdens on Jesus. Earnest prayer enters into the treatment of self or of others. Service for others, with its attendant joys, comes as a natural consequence of the deeper realization of truth. Prayer or relaxation accompanied by dwelling on certain ideas that tend to deepen the patient's faith and expectancy of relief act as "spiritual anesthetics." Under its influence, pain and other symptoms are said to disappear.

Another type of individual work is that carried on by the Rev. Thomas Calvert.[9] Formerly a clergyman in a parish near Albany, he has for the last fifteen years

9. Mr. Calvert died in April, 1926.

been carrying on a church mission of healing in New York. Mr. Calvert places great faith in what he terms psychanalysis, in which he says he has instructed himself since its first appearance and he uses it regularly to uncover his patients' "complexes." By persuasion and suggestion he then proceeds to reeducate the individual, using religion as a basis for the readjustment. When medical attention is required the patient is referred to a physician. Mr. Calvert is entirely willing to work with physicians, and states that his work is not in any way designed to take the place of medical attention when this is needed. The mission is supported by donations and by the fees from patients. Originally, the plan of free will offering was followed. It is still followed if the patient is not able to meet the fixed charge; but since a less systematic method of meeting expenses was found to threaten the support of the work, a definite price of $5 for forty-five minutes, $10 for ninety minutes and $15 for 120 minutes has been set. Mr. Calvert alone carries on the treatment and devotes his entire time to the work. He has many testimonials to the success of his endeavors.

Still another method is that pursued by John D. Quackenbos, M.D., fellow of the Academy of Medicine and professor emeritus of Columbia University. He states that he has treated in the course of his practice more than 20,000 cases of addiction to alcohol, tobacco or drugs. The method pursued by Dr. Quackenbos is to induce a subjective mental state through the administration of certain drugs, including trional, passion flower and bromide. While the patient is in that state he suggests the elimination of the pernicious habit. Dr. Quackenbos feels that when the patient is in the particular state which his medication induces, the operator has direct access to what may be the spirit, or some mental mechanism which is peculiarly susceptible to religious suggestion. He is brought to this conclusion because of the nature of the rapport established, the ready response on the part of the patient to influence for good, and the tendency to definite rejection of evil suggestions. For this reason he uses Biblical and other religious material in the suggestions which he introduces into the mind during his treatments. As a rule, these consume two hours.

Although he confines his practice mainly to the treatment of pernicious habits, he has also treated other conditions, and in cases of paralysis of one sort or another, for instance, where medicine is of little avail, he has witnessed, he believes, a marked improvement in control, securing in one treatment what it would ordinarily take weeks of reeducation in the waking state to accomplish. So potent, says Dr. Quackenbos, is an idea introduced into the mind while in this condition, that even the effects of the comparatively large doses of the drugs appear to be entirely removed by posthypnotic suggestion, and the patient experiences no difficulty in going about his regular pursuits as soon as he is brought back to consciousness.

Similar to the work of Dr. Quackenbos, but different in that the state of lowered psychologic tension may not be as profound and is brought about without drugs, is the work of certain other individuals outside the medical profession who, like the New Thought teachers, usually give public lectures, which they follow up with private courses and individual treatments. These individuals usually call themselves Practical Psychologists, or Teachers of Metaphysical Healing.

SPECIAL APPLICATIONS OF RELIGION

Included in the testimony is the work of institutions where religion is made an essential element in the reconstruction of the lives of certain individuals.

The late William Gould, who founded Gould Farm, is said to have based his entire system on the healing power of religion. Mr. Gould believed that there is a definite technic by which the spirit may be developed, and with its development physical healing follows as a natural consequence. Religious discussions, prayer and service for others enter essentially into the routine at Gould Farm. Since Mr. Gould's death, his co-workers feel that there has been a deepening of the spiritual life among them which has enabled them to carry on successfully in spite of Mr. Gould's physical absence.

Deaconess Young reports that her work with wayward girls is made possible by the influence of deep religious conviction in her own life, and uses religion as a stabilizing influence in the readjustment of those who come under her care.

The Salvation Army and other rescue societies provide testimony as to the influence of religion in the conversion of all sorts of derelicts, including the alcoholic and the drug addict.

OTHER ASPECTS OF THE SITUATION

Besides teachers and practitioners concerned in the organized movements and the individual work referred to in the preceding sections, there are many others in the field, who reach the public through magazines and books, correspondence courses, phonograph records and even radio talks.

Though we have made only a very cursory survey of the magazine field, our collection includes some twenty-five or thirty magazines with such titles as "Now," "Truth," "Leaves of Healing," etc. Brentano recently had a special display of books on this subject containing works by a hundred or more authors.

One need but consult the advertisements in the Sunday newspapers to gather some idea of the activity going on every day. There are sometimes as many as twenty or twenty-five healing services or lectures on religious healing advertised among the notices of religious services in any one of the Saturday or Sunday issues of the newspapers. Advertisements in such publications as the *Psychology Magazine* shed further light on the extent and variety of the work.

In an attempt to obtain material in the way of advertisement, dodgers, advertising lectures, etc., I have collected enough to fill more than three large scrapbooks of fifty pages each, and this material merely begins to cover the field.

MODERN MOVEMENTS WITHIN THE CHURCH

Jesus made healing a definite part of his ministry,[10] and in the Christian Church healing has been carried on more or less throughout its history. However, the attempt to introduce healing systems as a fundamental part of the Christian ministry is a comparatively recent development. There is now, however, a keen interest in this field and it is rapidly gaining ground. Especially in the Episcopal Church do we find a systematized effort to develop this work.

EPISCOPAL CHURCH

Emmanuel Movement.—The Emmanuel movement was established in the Emmanuel Church of Boston

10. Tabulation of the miracles of Jesus is given by Witherill, F. M.: Healing in the Churches, New York, Fleming H. Revell Company, 1925, p. 36.

some twenty years ago by Rev. Dr. Elwood Worcester and Rev. Dr. Samuel McComb. Neither had had medical training, but both were thoroughly grounded in psychology. The Emmanuel Church is still carrying on the work, and at one time it had associated with it men of high standing in the medical profession. Dr. Richard Cabot especially appears to have been interested in this work. When Mr. Worcester and Mr. McComb started their work, it was with a desire to do something for the physical relief as well as for the moral uplift of needy people who came within their reach. The work started with a tuberculosis class in which instruction was given to sufferers from that disease who lived in the tenements and who were unable to go away for treatment. They were given general health information and instruction on methods designed to help their condition and to prevent the spread of the disease to others.

The scope of the work was broadened by the addition of an "Emmanuel health class," in which treatment by suggestion was a feature. No person was admitted to the class without competent diagnosis of the case by a regular physician indicating that there was no organic disease demanding medical or surgical treatment and that the case was one amenable to treatment by psychic methods. Morning and evening clinics were held, and a weekly meeting. The daily treatments were given in the church. At the weekly meetings, the service consisted of Scripture reading, prayer and a short address. Topics such as worry, anger, habit, suggestion, insomnia, nervousness, peace in the home, what the will can do, and what prayer can do were discussed. The work of the Emmanuel clinic is now largely confined to drug and alcohol addicts. Medical supervision is not now as well provided for as formerly.

Dr. Richard Cabot made a study of 178 cases treated at the Emmanuel clinic and reports as follows: In eighty-two cases of neurasthenia, seventeen patients were much improved, sixteen slightly improved, seventeen not at all improved, and in twenty results were not reported. Of twenty-two alcoholic addicts, eight were much improved. In other cases of fears, fixed ideas, obsessions and hysteria, about one fourth of the patients showed real improvement. There was also an encouraging success in the treatment of those addicted to the use of drugs, morphine, cocaine and the like. Sad, discouraged, in some cases suicidal patients were helped and put in the way of living honorable and useful lives.

Nazarene Movement.—This movement was established by Rev. Henry Blauvelt Wilson of Boonton, N. J., in 1909. Mr. Wilson had formerly been priest in charge of Holy Cross Mission in the Ridgwood section of Brooklyn. In the course of his work he was frequently called on to comfort his parishioners and others in the hospital and in their homes when they were sick. He seemed to be particularly successful in accomplishing this and he felt that the Gospel message which he brought to them played an important rôle in the recovery of those whom he visited during their illnesses. On account of ill health on his own part he was forced to give up his work in the city and retire to a smaller parish out of town This he did and shortly afterward he established the Society of the Nazarene on the following principles:

The Society of the Nazarene, founded on the belief in our Lord's continued interest in the health of the body as well as the salvation of the soul: requirements for membership.

1. Belief in the divinity of Jesus Christ.
2. Belief in the possibility of following his precepts.
3. Belief in his works of healing and in the perpetuation of their power among believers by the use of the sacred name "Jesus of Nazareth."

The original membership was seven persons, all directly connected with Mr. Wilson's family. Mr. Wilson has since died and the work is being carried on by Rev. A. J. Gaynor Banks, with headquarters at the House of the Nazarene, Mountain Lakes, N. J. Membership in the society now numbers about 7,000. Its official organ, the *Healing Evangel,* has a circulation of about 6,000. At the Mountain Lakes headquarters is a "guest house where approved cases are received for special care and treatment under spiritual and medical supervision,[11] a chapel where daily services are held for intercession and healing, and a training school where leaders may receive proper instruction in the work of healing, develop such gifts as they may have, and receive spiritual instruction and encouragement."

Healing is accomplished through establishing faith that Christ still heals as he did when he was on earth, and that if his help is sought in the right way it will be given. Certain healers are said to be endowed with a "gift" of healing. Some are born with it; others report having become aware of being in possession of it after some such experience as the disciples had on the day of Pentecost, after which their spiritual powers were markedly increased. Mr. Banks does not feel that he has been endowed with this gift of healing, but that he secures his results through the faith which he establishes in his patients. He believes that this state of consciousness results either in the removal of inhibitions to the natural healing forces or the stimulation of those forces, or that the body is thus conditioned to receive added strength from an infinite source. In individual cases he establishes faith through persuasion in personal conferences with the patient, teaching from those parts of the Gospel which deal with healing, and heterosuggestion with Biblical material and affirmative prayer. He has also worked up a quantity of religious material for the patient to use after the method advised by Coué; that is, by systematic autosuggestion before going to sleep, immediately on waking, and at intervals during the day.

The activities of the director of the Nazarene movement include missions, individual treatments and intercessory prayer. A prayer service for others is held daily for those who ask for prayer to help them in any difficulty. The director includes in his prayers the names of all those who have communicated their need to him in person or by letter, telegraph or other means.

Missions are held in various parts of the country by invitation from the clergy of the district. Previous to the coming of the missioner, the people are prepared through sermons to come to the mission expecting physical or spiritual help. The latter is considered as important as, if not more important than, the former; for although instantaneous or gradual physical cures are reported, it is believed that in the majority of cases the spiritual cure, that is, the enhancement of the patient's faith, desire to live a godly life or ability to make the best of his handicaps if they cannot be removed, is the most important contribution of this work. It is stated that very often the patient's entire outlook on life is changed for the better, although his physical condition may remain the same

11. There is a resident nurse on the guest house staff, but no physician. Presumably medical cases are under the care of their own or local physicians. Plans for the future development of the work include more adequate provision for medical supervision.

A mission lasts for several days. Healing services and individual conferences are held daily. Any one who is ill or in trouble of any kind is welcomed and no one is excluded. No diagnosis in the case of physical conditions is required, nor has there been any systematized follow-up of the results. It is, however, definitely understood that the healing services are not intended to interfere with medical attention.

The services are similar to an ordinary church service, with sermon, hymns and prayers designed to increase expectancy. Following the services, all those who wish to do so may go forward to receive the missioner's blessing, laying on of hands, and anointing with oil.

These missions are attended by hundreds, sometimes thousands, and by people suffering from all sorts of disease, as well as by those who attend merely for the spiritual uplift thus obtained. Interest in this type of service was greatly increased by the world-wide tour of the Divine healer Hickson, who has just completed a tour of the world under the auspices of the Episcopal Church, and Hickson's methods are being followed rather closely in the work of the Nazarene movement. As the healer anoints the petitioner he addresses him in a positive manner, telling him that he will be healed, and that from henceforth he must obey God's laws, that he cannot expect to be healed and continue in godless ways, and that he shall repent and begin anew at once.

After the mission has been held in a community, a prayer guild is established there to continue with the work. The nucleus is made up of those whose interest has been kindled by the mission. Regular meetings are held at which prayers are said for the members and for others who may ask to be helped by the prayers. Such a prayer guild, probably the best established of its kind in New York, has been in existence for the last seven years in Grace Church. It is reported to have accomplished many seemingly miraculous cures as well as to have justified its continuation through its influence on the general spiritual welfare of its members.

The work of the Nazarene movement is supported by membership dues, subscription to the monthly magazine, sale of other literature dealing with the work, free will offering for benefits received, and other voluntary contributions. Its purpose is not to take the place of other religious activity, but to make healing through faith a part of the work of the church. Nor is it designed to take the place of medicine, but to offer an aid to medicine. On the other hand, there is a tendency on the part of the leaders of the movement to believe that, with proper technic and development of the spiritual nature, more material methods may in time be superseded.

Church Mystical Union.—The purpose of this movement is to advance mysticism in the church. It attempts to cultivate the soul after the methods of the mystics. The movement is well established in England and is now gaining a following in this country. Rev. L. W. Fearn, warden of the Church Mystical Union, is at present engaged in the advancement of the movement in the United States. He holds services in certain churches, lectures on religious subjects, and gives private consultations.

Mr. Fearn states that in England he carries on work in cooperation with physicians, and says that he has been able to assist in the cure of many supposedly incurable conditions. He is loath to discuss this part of his work, however, since he believes it is only a corollary to his main purpose, which is to develop the spiritual nature. He believes that this can be accomplished by a definite technic, including righteous living and certain mystical influences. When the spiritual side of his nature is developed, the individual becomes conscious of latent power of which he was formerly quite unaware, and his entire attitude toward life is changed. "Superconsciousness," or "cosmic consciousness," with its attendant expansive influence, is the end in view.

Mr. Fearn states that he has so developed certain latent powers within himself that he is able to diagnose a patient's physical condition by placing his hands on him. He is also able to discern the relative degree of potential sprituality present in a given individual merely by being in his presence for a short time. His treatment begins at the level at which he finds the patient, and is in accordance with the spiritual potentiality of the individual.

Individual Efforts.—(*a*) Group Treatment: Certain churches since the time of Hickson's campaign have continued to hold weekly healing services. Chief among them are St. Luke's, Trinity Chapel, Church of the Transfiguration and St. Mary's Episcopal Church. The attendance at these services varies, and the leaders are inclined to believe that the group method should be replaced by more individualized work. In the healing service, prayer and laying on of hands preceded by a short sermon is the usual procedure.

(*b*) Personal Treatment: 1. Primarily for physical healing. Certain clergymen who have been especially interested in the subject of healing have developed a technic for individual work. This consists for the most part in allowing the patient to talk about his difficulties, convincing him of Christ's power to heal, prayer, and in some cases laying on of hands. If the case is carried over a long period of time, instruction along the lines of Christian living is given. Rev. William T. Walsh of St. Luke's Church, who has perhaps given more thought to this subject than any one else not exclusively engaged in the practice of healing, states that there is in the Bible abundant evidence of a very definite technic of healing used by Jesus and his disciples. His forthcoming book [12] will discuss this subject.

"In dealing with the individual patient," says Mr. Walsh, "the best results are obtained when the patient is in a subjective state. When a subjective state has been brought about, emphatic, positive suggestion must be given."

It is necessary for the one giving the treatment "to be quietly but deeply aware that life in him and life in the patient are one manifestation of the ultimate reality in the universe; namely, spirit." By spirit Mr. Walsh means "a reality which is not material, such as life." "When a person is sick, something has gone wrong with the 'life.'" He believes that it is just as possible to transfuse this "nonmaterial reality" as it is to transfuse a "material reality" like blood. The technic by which the one is accomplished must be just as carefully developed as the other.

Mr. Walsh describes a healing treatment as follows:

SPIRITUAL HEALING IN THE CRISIS OF A DISEASE

A lawyer was stricken by a severe attack of pneumonia. In due course came the crisis, and while it was pending his wife sent for me.

On arriving at their home, I asked, "What does the physician say?" The answer showed that it was a typical case.

12. Walsh, W. T.: Scientific Spiritual Healing, New York, D. Appleton & Co.

The physician had said that the crisis might come any time within the next twenty-four hours, and that while he hoped for the best the balance might turn this way or that and no one could tell which way it would be. Everything depended now on his courage and his fighting spirit.

When I was shown to the patient's room I found him very weak and only partly conscious; at least, so it seemed; but I found out from him later that he was conscious but so weak that he could not give evidence of it. I sat on the bed beside him and gently stroked his forehead. He was restless, so I began to meditate aloud somewhat as follows:

"God says, 'Be still and know that I am God.' Look at me and when I tell you to close your eyes they will close and a feeling of comfort and ease and peace will come about them. To be still means to relax. Now the muscles about your eyes relax and your eyelids close and already there is a feeling of ease and comfort and peace around your eyes.

"That feeling of ease and comfort and peace and well being is going to spread all over the body. Now the muscles of your face and neck relax and your head sinks easily and comfortably on the pillow."

Here I passed my hands over his chest, gently touching him as I continued: "Now the muscles about the chest relax and there is a feeling of ease and comfort and well being all about your chest and around your back.

"There is such ease that you are not conscious of any effort in breathing. [The patient had been breathing with some difficulty when I arrived, but this gradually subsided.] The air is all about you and gently enters your lungs so smoothly and peacefully that it is now a pleasure to breathe.

"God speaks to your mind and says, 'Be still, mind, and know that I am God.' So now your mind relaxes and is still. To relax means to let go. Your mind lets go of the past. Any doubts or fears that might in any wise interfere with the well being of your body now depart. Your mind is still. It lets go of them and they are gone. Anything that you have heard or thought about your condition that might interfere with your peace or health likewise departs. There is nothing in the past to worry you. On the contrary, out of the past come only words of cheer and confidence, absolute confidence."

Continuing the treatment, I said: "Now your mind lets go of any thought about the future that might in any wise interfere with your well being. There is nothing to fear in the future, for it stretches out before you like a pleasant way and you pass through it confidently, easily and securely. Your mind is now entirely relaxed. It makes no effort. Without any effort you are going to hear and to understand everything I say and no other sound will disturb you.

"God speaks now to the very soul of you, and says, 'Be still and know.' The Scripture says we are partakers of the divine nature. We partake of the life of God. God is the infinite life in all the world. He shares that life with you. God's life is immortal and you are immortal because you partake of the immortal life of God.

"God is the infinite power in all the world. You partake of that power. Deep within you, beneath body and mind, is the life which comes from God. It brings with it the power of God. You partake of his strength. Now the divine power manifests itself in the depths of your nature. It communicates itself to your heart, and your heart beats easily, smoothly, regularly and irresistibly. Your heart feels such power that it knows that nothing can stop it, for the power of God manifests itself there.

"God is infinite vitality. You partake of that divine vitality. God shares it with you. It communicates itself to your heart, and your heart beats with its power. The divine vitality communicates itself to your blood. And now as the blood flows through your body the divine vitality is manifested in every cell and tissue and organ of your body. It takes away all feeling of congestion. It manifests itself in and through your lungs, relieving and strengthening. Every cell and tissue is now conscious of power and vitality and health and well being from the infinite source.

"God is all courage. There is no fear in God. He shares that courage with you. You are partaking of courage from the infinite source of all courage. Your heart beats courageously. The blood flows along, bringing the message of courage to every cell and organ. Gladly they receive it. Courageously they do their work eliminating and upbuilding. You are surrounded by courage as by the air you breathe, for in the divine courage, in God, we live and more and have our being.

"Even while you sleep you will be breathing in, as it were, life, power, vitality, courage, health and strength and peace. When you awake you will be quite renewed." I then laid my hands on his head and chest, repeating the words of the Scripture, "They that believe shall lay hands on the sick and they shall be healed," and the following prayers: "Almighty Father, according to thy word we lay hands on this, thy servant. May he even at this time be conscious of thy power manifesting itself to the healing of his body, mind, and soul. 'Now unto Him that is able to do exceeding abundantly above that we can ask or think, according to the power that worketh within us, unto him be glory in the church by Christ Jesus throughout all ages, world without end. Amen.'" [Ephesians 3:21.]

The next day I was informed that after I left the sick man he had his first real rest in some days. I continued to treat him daily for about a week, and in due time he was quite restored to health. Toward the end of the time I treated him, he said, "I have a wonderful physician, but I know who saved my life. When you first came to me I felt that I was gradually slipping away. I was too weak and tired to resist. But as you treated me I experienced what you were describing. You brought just what I needed and at the time when I needed it most."

Mr. Walsh places great emphasis on the establishment of expectancy on the part of the patient, and belief that the "healer" can help him. He makes a plea for establishing faith which is based on truth rather than making a practice of taking advantage of imperfect beliefs for temporary gain in the form of curing disease. The ultimate aim of spiritual healing, he says, "includes teaching the patient the whole truth as far as we understand it and he can receive it." He also makes a plea for common sense and the use of medicine so far as this is called for in every case.

Personal treatment with physical healing is a secondary matter. Certain clergymen who have not taken up religious healing as an end in itself report cases from their experience in carrying out the pastoral duties of their office, which would bear witness to the therapeutic value of faith. Professor Batten of General Theological Seminary, who now gives instruction in religious therapeutics at that institution, has had a varied experience along these lines. In the course of his ministry it was not unusual for people who were seriously ill or who had been given up by their physicians to come to him and ask for spiritual help in their distress. Through the calming influence of the religious faith which he was able to build up in them, patients were frequently restored to confidence and enabled to make the most of their remaining days, if not helped to unexpected recovery.

Professor Batten places more confidence in an individual approach, depending on the nature of each particular problem, than on more wholesale methods and regards physical restoration secondary to the establishment of spiritual health with its stabilizing influence. This view is held by many who fear that placing emphasis on physical healing will have a deleterious effect on religion.

Body and Soul Clinic.—This clinic was started by Dr. Edward Cowles at St. Marks In-The-Bouwerie about three years ago. It meets in St. Mark's Church three

times a week. Certain patients receive additional treatments on nonclinic days at the Park Avenue Hospital, where Dr. Cowles also sees private patients. The work in this clinic is carried on by Dr. Cowles as chief and examining physician, a clergyman and several volunteer assistants, some of whom are previous patients. The doctor talks with each patient and makes such limited physical examinations as the clinic facilities and time permit. Certain laboratory tests are done at a private laboratory to assist in the diagnosis and plan of treatment. When more careful examination is called for by the nature of the case, the director states, patients are referred to other clinics where such examinations may be made.

Treatment at the clinic consists of suggestion administered individually by Dr. Cowles, followed by religious suggestion administered in groups by the clergyman. Immediately preceding the treatment, patients are given a sedative. As he administers suggestion, the doctor presses the closed eyes of the patient, using the fingers of one hand, and with his other hand takes hold of the patient's arm. During this treatment, which consumes only a few moments, the patients lie down in turn on couches provided for the purpose. Nervous and mental diseases seem to predominate. The clinic usually administers to about seventy-five people at a session, mainly young men and women. Patients who have been helped are enthusiastic in their claims of cure and take pleasure in testifying to the efficacy of the treatment, some speaking of it as magic and quite superior to anything they have ever experienced elsewhere. They volunteer this information and recite their testimony in the manner of an oft repeated routine performance. The services of the clinic are free. There is a nominal charge for laboratory examinations when the patient is able to pay for them.

OTHER PROTESTANT CHURCHES

Healing has not been taken up in a systematic way in other Protestant churches, but the interest in it is keen. Many churches have opened their doors to various teachers of the New Thought school. The work takes the form of a series of free public lectures, supported by free will offerings and followed by private courses, which usually cost about $25 for a series of six or eight lectures. Private consultations are also a feature. Other churches have held evangelistic services during the visits of various divine healers to this city. Some physicians report that clergymen have helped them materially in the treatment of particular types of patients. Physicians also enlist the clergyman's aid in the hospitals and in the home when it is felt that his influence will help to raise a patient's morale, as it frequently does with certain types.

Guild of Health.—This organization is of comparatively recent development along lines similar to those of the Nazarene movement, in that it seeks to establish prayer guilds in churches. The Guild of Health, however, confines its work to Protestant churches other than the Episcopal, and emphasizes the educational rather than the ceremonial approach. Rev. Franklyn Cole Sherman, formerly rector of St. Paul's Church in Akron, Ohio, is the founder. The headquarters are in Cleveland. Since its foundation three years ago, it has twice been necessary for the guild to move to larger quarters. Its work is carried on through lectures, literature and personal service on the part of Mr. Sherman. The purposes of the work as stated by Mr. Sherman are:

1. To present a Christian philosophy of life, in harmony with modern philosophy and psychology.
2. To show how the Christian religion can be made practical in the daily life. Special attention is given to problems of mental and physical health.
3. To demonstrate the practical methods that have been found effective, the technic of faith and prayer.

Mr. Sherman is an enthusiast with regard to spiritual healing. He believes that he was himself cured of tuberculosis thereby, and that, if proper technic is developed, all diseases, both functional and organic, may be attacked by this method. Cures, declares Mr. Sherman, are effected by coming into direct conscious communion with God. Although Mr. Sherman feels that in time medical attention will be superfluous, he most firmly expresses the opinion that, until a superior method is developed, physicians and clergymen must and should work hand in hand.

The work of the guild is carried on by donations, membership dues, subscriptions to its official organ, a monthly magazine called *Applied Religion*, and free will offerings.

(To be continued)

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

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(Continued from page 1527)

SHAKE MIXTURES

As previously stated, the prescribing of suspensions should, if possible, be avoided. Occasions may, however, arise when it may be desirable to suspend, in watery fluid, either insoluble solids or oils. In the former case, we speak of "shake mixtures" or merely "mixtures"; in the latter case, of "emulsions."

Mixtures, in the pharmacopeial sense, are aqueous liquid preparations that contain finely divided solid matter in partial suspension. Hence, an official mixture is always a cloudy or muddy liquid; as, however, the word is applied in a popular sense to any combination of different ingredients, the term "shake mixture" is more distinctive, and will be used here.

Shake mixtures enable us to administer insoluble substances in fluid form. They have the advantage over powders, divided into separate doses in an appropriate manner, of being less laborious in preparation and therefore somewhat less expensive. Such mixtures have the disadvantage, however, of a certain degree of inaccuracy of dosage; for, even though shaken thoroughly just before taking, a certain amount of separation is liable to take place even while the medicine is being poured. It is for this reason that the prescribing of shake mixtures should generally be avoided. Accurately divided powders, suspended in water just before taking, are preferable. Mixtures containing poisonous sediments should never be prescribed, for

* This is the twenty-first of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

they are dangerous. More important is this medicinal form for external use and for the intramuscular administration of certain medicaments, as mercuric salicylate.

Should the prescribing of a shake mixture be decided on, it is generally best to add mucilage, syrup or glycerin to the liquid holding heavy insoluble substances in suspension, so as to increase the viscosity of the liquid, thereby lessening the rapidity of separation and increasing the accuracy of dosage.

Perhaps best for the suspending of heavy powders is the (6 per cent) mucilage of tragacanth, from 5 to 10 per cent of which suffices for all purposes. Mucilage of acacia is less efficient, from 25 to 50 per cent of its mucilage being necessary for heavy powders. Syrup or glycerin must be employed in still larger quantities, to be of much service. Nevertheless, there are reasons why glycerin is at times preferable to all others:

1. The other suspending agents do not keep well, having a tendency to ferment, especially in hot weather.

2. Bismuth subnitrate may form with mucilage of acacia a heavy mass that settles to the bottom of the bottle, from which it cannot be dislodged after a few days' standing by even violent shaking.

3. Preparations intended for application to the skin (lotions) containing mucilage are apt to leave an unpleasant sensation of tightness after drying. Glycerin added to the extent of about 5 per cent produces a smoother lotion, without this objectionable tendency. More may be objectionable. Unfortunately, the suspending qualities of glycerin are rather slight.

Because of its liability to ferment on account of the sugar and acacia that was present in it, the chalk mixture of the new pharmacopeia is made with prepared chalk (6 per cent), glycerin (10 per cent), cinnamon water (40 per cent) and water, and is now endowed with good keeping qualities. Its dose is 15 cc., or 1 tablespoonful.

The only other mixture left in the Pharmacopeia is the compound mixture of glycyrrhiza, also known as "brown mixture." This is a typical remnant of the good old days when medicine not only looked brown but also had a rather "dark brown" taste. Its popularity is due to the activity of the 2 mg. of opium and 1 mg. of antimony and potassium tartrate per dose of 4 cc. contained in it, and probably also the fact that the presence of these is not even suggested by the title. As this may lead to the use of an opiate in a cough in which it may not be desirable, it is evident that the ethics of naming a mixture after its most active ingredient cannot be sinned against with impunity even by the Pharmacopeia.

Though not thus named, magnesia magma (milk of magnesia) and ferric hydroxide with magnesium oxide (arsenic antidote) are really mixtures. In each of these cases, advantage is taken of the fact that substances just precipitated—being partly colloidal—are more easily kept in suspension than the same material after it has been dried.

EMULSIONS

Emulsions are mixtures of milky appearance, made by suspending oily or resinous substances in aqueous liquids.

The object of emulsification is to render certain substances that are insoluble in water freely mixable with this fluid, which makes it easier to disguise the taste of substances, facilitates their absorption, and permits admixture of other medicaments.

Two immiscible fluids can, of course, be mixed only if one of these, dispersed into minute droplets (the disperse phase), is suspended in the other fluid (the continuous phase). If oil and water are violently shaken together, they will form a milky fluid—an emulsion—which on standing soon separates into its components. If, however, colloids, such as gum, protein or soap, are present in proper proportion, the separation does not readily occur. Colloids evidently keep the disperse phase from coalescing. Just how they do this is not completely understood. Viscosity and lowering of surface tension are no doubt two influences they introduce that favor emulsification. There may, however, be other factors, such as the formation of a surface film on the droplets of oils and the modification of electric charges. The smaller the droplets, the higher the viscosity; and the more nearly equal the density of the two liquids, the more stable will be the emulsion. Rarely are these factors so perfectly balanced that the emulsion keeps indefinitely. Usually, partial separation takes place sooner or later. However, if the emulsion is well made, mere shaking would suffice to produce uniformity.

Though there is no essential difference between them, emulsions are usually subdivided into two classes: natural emulsions and artificial emulsions. Natural emulsions are exemplified by milk and by yolk of egg. The milk juices existing in plants are natural emulsions, which, when dried, yield an intimate mixture of gum and resin, the gum-resins, which merely require the addition of water to produce an emulsion. The official emulsion of asafetida is an example of this kind of emulsion. It is prepared by rubbing up 4 per cent of asafetida with water and straining. It is used as a carminative. Its dose is given in the U. S. Pharmacopeia at 15 cc. (1 tablespoonful). Probably the best use for this emulsion in tympanites is to give it in much larger dosage by rectum. For peroral administration, as a carminative, asafetida is much more humanely prescribed in capsules.

When oily seeds, as almonds, are rubbed with water, the fat they contain in a fine state of subdivision becomes suspended in the colloidal solution formed by the action of water on the protein of the seed, producing an emulsion. Such a preparation was official in the last Pharmacopeia as emulsion of almond.

The fact that emulsions are rather good emulsifiers may be taken advantage of in the preparation of emulsions in the household. A turpentine enema useful in the treatment of tympanites may, for instance, be prepared in the home by beating from half a teaspoonful to 1 teaspoonful of turpentine with the yolk of an egg, and then gradually adding a pint or a quart of warm water. If these directions are not given and the turpentine is merely mixed with water, the oil floating on the top will enter the rectum last and undiluted, causing a proctitis with its often almost intolerable tenesmus. As another instance of the domestic preparation of an emulsion may be cited the following method of administering castor oil: A cup of milk is heated to the boiling point and shaken up—preferably in a lemonade shaker—with ice cold castor oil. If this is taken immediately, before the oil has had time to separate, no other impression than that of drinking rather rich cream is conveyed to the palate.

If we desire to produce an emulsion of an oil unassociated with an emulsifier, an artificial emulsion, we may do so by simply shaking or triturating the oil with a

colloidal liquid, such as mucilage of acacia or extract of malt. A better method, however, consists in reproducing the condition present in gum-resins or in seeds; namely, in first securing an intimate admixture of the oil and the gum, and then adding the water with active trituration, the oil being dashed into globules at the same time that the water dissolves the gum. In order to be successful with this method, it is necessary to have a sufficient quantity of gum mixed with the oil, the most generally useful proportion being 1 part of gum to 4 parts of fixed oil (2 or 3 parts of volatile oil). It is likewise necessary to add enough water to dissolve the gum at once, avoiding, however, an excess of water, which would thin the mucilage, rendering it less efficient as an enveloping agency. A suitable proportion is 2 parts of water for 1 part of gum.

The Pharmacopeia contains a formula for cod liver oil emulsion (dose, 1 tablespoonful), which contains 50 per cent of the oil, 12.5 per cent of acacia, 10 per cent of syrup, and 0.4 per cent of methyl salicylate (wintergreen). The National Formulary affords a variety of other flavors that might be resorted to should the wintergreen flavor pall on the patient's palate. The National Formularly also has a formula for a castor oil emulsion, which contains 30 per cent of oil, and hence may be given in doses of 3 tablespoonfuls.

The official emulsion of oil of turpentine is an example of a volatile oil emulsion. Each average dose of 2 cc. contains 0.3 cc. of oil of turpentine emulsified by 0.1 Gm. of acacia.

In prescribing extemporaneous emulsions, it must be borne in mind that the three essential ingredients in all emulsions are oil or resin, emulsifying agent and water.

Emulsions may be made to contain from 30 to 50 per cent of fixed oil. Volatile oils or similar liquids, as chloroform, creosote or paraldehyde, are not emulsified as readily. Their emulsification is greatly facilitated by first adding to them one-half their volume of a fixed oil, such as expressed oil of almonds, the solution being then emulsified. This is called emulsification by intervention.

The emulsifying agent *par excellence* is acacia. As previously stated, it should be present in the proportion of 1 to 4 of fixed oil, or 1 to 2 of volatile oil. Whenever a physician is in doubt as to the quantity of emulsifying agent needed, he may simply prescribe "a sufficient quantity" of the emulsifier. Resinous tinctures may be emulsified, and thus a perfect mixture be obtained with water, by adding twice the volume of mucilage of acacia, the latter to be diluted with water as much as possible before adding the tincture, in order to prevent precipitation of the gum by the alcohol. Other emulsifying agents are extract of malt, yolk of egg and condensed milk; they have, however, no advantage over acacia. Saponin is an efficient emulsifier; but it has an acrid taste and irritating qualities which render it objectionable for internal use. For external use, on the other hand, especially for emulsifying tar or similar products, it may be used to good advantage in the form of tincture of quillia, 4 parts, to 1 part of tar; water may then be added in any quantity. Soaps, and alkalis by forming soaps, are useful emulsifying agents for external use; they are undesirable for internal use, because of their disagreeable taste, unless the effect of an alkali is also desired, as is the case in the old efficient but nasty "Lafayette mixture," the copaiba mixture of the National Formulary, formerly much employed in urethritis. It contains, in each 8 cc. dose, 1 cc. of copaiba emulsified by the aid of acacia and solution of potassa, 0.24 cc., with peppermint water and syrup in a somewhat abortive attempt at disguising, and 1 cc. of spirit of ethyl nitrite to reinforce its diuretic action.

Emulsions for internal use are generally sweetened with syrup, glycerin, or extract of malt. They are flavored with volatile oils, the quantity of which should not exceed 0.4 per cent, or with tincture of vanilla.

Incompatibilities.—Syrup or glycerin, if added in large amounts, increases the tendency to separation; hence only moderate quantities of these substances, say 25 per cent, are permissible. Acids and acid salts antagonize emulsification, while, as previously mentioned, alkalis and alkaline salts assist. Substances that are incompatible with gum, such as alcohol or ferric chloride, are incompatible with gum emulsions. Tinctures may be added to the extent of 25 per cent or less, provided the alcohol has no marked solvent action on the emulsified substance (as is the case with castor oil).

It must be remembered that emulsions containing acacia, sugar or other fermentable substance, unless they also contain antiseptic ingredients (as alcohol, 10 per cent), do not keep for more than a few days. Hence only moderate amounts, to last for not more than several days, should be prescribed at a time; and the medicine should be kept in the icebox.

The dose of emulsions ranges from a teaspoonful to a tablespoonful. As they are not digested in the stomach, they are best administered about two hours after meals, so as to be introduced into the intestine as promptly as possible. After all that has been said about emulsions it will be realized why it is best, when the dose is large, to let the oil be taken clear, with or without disguise, as previously discussed.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

TETRAIODOPHTHALEIN SODIUM (see THE JOURNAL, Sept. 26, 1925, p. 975).

Iodeikon Capsules-Swan-Myers.—Each keratin coated capsule contains iodeikon, 0.25 Gm.

Prepared by Swan-Myers Co., Indianapolis, Ind.

Communal Health Program.—As, perhaps, the greatest contribution to health is to be accomplished by adequate service for the early diagnosis and preventive or early treatment of disease in hospitals and dispensaries and through the companion agencies of the visiting nurse, social work, the convalescent home, the home for chronics or incurables, the preventorium and sanatorium, we must properly include in our program of communal health those facilities and the costs of them which are needed to provide complete medical care free or at part cost to the sick, whether this be for the acute communicable diseases, tuberculosis, venereal diseases, mental diseases, or for the general medical, surgical, obstetrical and pediatric patients provided for in general hospitals and dispensaries.—Emerson, Haven: *Hospital Social Service* **13**:109 (Feb.) 1926.

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SATURDAY, MAY 22, 1926

UNWARRANTED THERAPEUTIC HOPES

Although drastic restriction in diet no longer characterizes the management of diabetes, the problem of suitable foods for diabetic patients still looms large. Insulin is not a "cure"; consequently the most rational policy at present consists, in the words of Joslin, in utilizing this agent along with all those measures that have proved of the greatest value in the treatment of diabetes without insulin. These are: adherence to a diet that will keep the urine sugar-free; avoidance of overnutrition or extreme undernutrition, and a method of life compatible with the strength that such a diet affords. Side by side with the exclusion of foods that promote either glycosuria or ketosis or both has occurred the search for palatable energy-yielding substances that will enrich the dietary of the diabetic patient without giving rise to the untoward consequences mentioned. The proposal for the use of intarvin (glyceryl margarate) by Kahn of New York, whose untimely death has just occurred, represented an attempt to furnish a fat not likely to promote ketosis in its metabolism.

There have been varied efforts to discover derivatives of the sugars of a chemical character such that they will not escape oxidative destruction as ordinary carbohydrates do in the diabetic organism. Caramel-like substances have been recommended, particularly by German clinicians. There are pitfalls, however, which every one interested in such entirely justifiable attempts must learn to avoid. The polysaccharide carbohydrate inulin, which by hydrolysis readily yields the sugar fructose just as starch yields glucose, has been recommended in the past for patients with diabetes. There are experimental evidences that considerable quantities of inulin, or inulin-bearing vegetables such as the Jerusalem artichoke, may be consumed by such patients without augmentation of glycosuria. This does not guarantee an actual utilization or "assimilation" of the inulin, however. There are no enzymes in the alimentary tract of man that are known to digest inulin, although it can be hydrolyzed by the acid gastric juice. It is conceivable, therefore, that the apparent tolerance of diabetic patients for inulin may be due to actual failure of digestion and absorption of this carbohydrate.

The real index of utilization in such instances is derived from observations of the metabolism—evidences of an actual combustion of the product in question. This is emphasized anew by the recent American studies of commercial glucosane preparations.[1] The anhydrosugar glucosane ($C_6H_{10}O_5$) and its polymer, tetraglucosane, are used in Germany in the dietary treatment of diabetes. These substances are reputed to be oxidized by the diabetic patient since, according to Nothmann and Kühnau[2] and others, no extra urinary sugar results after its administration, no rise in blood sugar occurs thereafter, and an antiketogenic and protein sparing action follows its ingestion. It is likewise reported to be glycogenic. The new American experiments demonstrate that large quantities of ingested tetraglucosane are excreted unchanged in the feces. Part may be destroyed by intestinal bacteria. As Deuel, Mandel and Waddell significantly point out, if a substance like glucosane is oxidized in diabetic patients it can be proved only by the demonstration of an increased respiratory quotient following its ingestion, coupled with the proof of its absorption from the alimentary tract and its nonelimination by the kidneys. Only rigorous experimental work of this sort will protect the enthusiast against the disappointment of ill founded therapeutic hopes.

NEPHRITIS AND NUTRITION

The management of patients exhibiting the varied symptoms commonly classed under the general designation of nephritis has been decidedly modified in recent years. The rationale of treatment has usually been expressed as the effort to rest the kidneys, remove the disturbing cause, and give the renal organs a chance to recuperate. These are obviously laudable purposes; but, when subjected to critical consideration, they lose something of their impressiveness. The implication that the kidneys are the only, or at least the foremost, parts of the body involved cannot be regarded as demonstrated; furthermore, it is by no means as clear today as it seemed to be a generation ago how the "rest" of the kidneys can be secured. At first thought it might seem as though starvation would represent the ideal condition for renal rest, as the function of the kidneys is "to excrete the ashes of food." But, as has often been pointed out, starvation does not rest the kidneys. "A starving person," Emerson[3] has remarked, "lives on himself so long as his body contains anything to live on, and consumes first the stored-up sugar, then the

1. Deuel, H. J., Jr.; Mandel, J. A., and Waddell, S. S.: The Physiological Behavior of Glucosane, Proc. Soc. Exper. Biol & Med. 23:431 (March) 1926.

2. Nothmann, M., and Kühnau, J.: Die Therapie der Gegenwart 9: 1925.

3. Emerson, C. P.: Essentials of Medicine, Philadelphia, J. B. Lippincott Company, 1920.

fat, then the protein of the muscles, and the ashes of muscles are more irritating to the kidney than those of milk. One would suppose that a fat and carbohydrate diet would be best, since the ashes of these are eliminated through the lungs. But the body must daily have some fresh protein with which to repair its worn protoplasm." Milk has had the greatest vogue as a food that meets most nearly the requirements of the diseased kidneys; yet the conventional quart of milk a day represents at most a scanty allowance of 750 calories for an organism that requires three or four times as much food fuel. A shortage for a few days can be borne with impunity if not actual benefit; but the treatment of the nephritides is usually a prolonged procedure counted by weeks rather than days, so that a negative balance of energy is sure sooner or later to exhibit the effects of the drafts on the body reserves. No individual organ benefits in the long run by an exhaustion of the organism as a whole.

The foremost component of the "ashes" of protein metabolism is urea. There was a time when this catabolite was charged with being the foremost instigator of harm when the renal function is impaired, notably in uremia. As has previously been pointed out in THE JOURNAL [4] and emphasized by recent writers,[5] the general burden of evidence goes to prove that urea concentrations as great as those encountered in the blood of some patients with nephritis are incapable of producing anything resembling the uremic syndrome. An extended investigation of the nonprotein nitrogenous components of the blood in nephritis has also revealed the fact that retention of these waste products may be, and usually is, lacking or an insignificant feature in certain types of nephritis; and notably in those chronic or subacute types which are characterized especially by edema which is not due to cardiac decomposition, the parenchymatous nephritis of older terminologies, the nephroses and the nephrotic forms of glomerulonephritis of Volhard and Fahr.[6] At present there is a recrudescence of the widely held opinion that diets exceptionally rich in protein, particularly in the form of meats, are a provocative of degenerative renal changes.[7] One of the foremost scientific contributions of recent years has been the actual demonstration that in certain types of so-called nephroses the loss of protein through the urine may actually be attended with a serious reduction in the concentration of the plasma proteins. This now constitutes a problem in protein replacement from a new standpoint.

It must be evident to critical students of the subject that the questions reviewed need to be approached with an open mind from new directions. The kidneys should no longer remain the sole center of interest in nephritis, at least so far as treatment is concerned. It is highly important, however, that the pendulum of the new enthusiasm shall not be allowed to swing to other extremes, such as the actual administration of urea or the widespread institution of high-protein diets in nephritis, without a careful scientific control, lack of which has marked the efforts of the past that were motivated by essentially theoretical considerations. Peters and his collaborators [5] at Yale University School of Medicine have pointed out that many nephritic patients present a specious appearance of being well nourished, owing to the existence of some edema. On proper investigation, they give evidence of considerable deprivation of protein, which may be due in part to dietary mismanagement. The further possibility that certain acute stages of parenchymatous nephritis may be characterized by an abnormally high protein metabolism should not be overlooked. The Yale clinicians assert that the total urinary nitrogen of many patients with such disease in acute and chronic forms is not a satisfactory measure of nitrogen breakdown. The latter can be estimated only from the urinary nonprotein nitrogen after proper allowance has been made for changes in blood and tissue nonprotein nitrogen and variations of body weight due to diuresis or accumulation of edema. By the administration of large amounts of carbohydrate and fat it has proved possible to reduce the protein catabolism to from 0.5 to 0.7 Gm. per kilogram daily. If enough protein is given to cover the nitrogen catabolism plus an additional amount equivalent to that lost as albumin in the urine, nitrogen wastage may be prevented. Most of these patients when they enter the hospital show evidences of previous protein deficiency. If they are given more than enough protein to replace the amount lost in the urine, they will store the excess within certain limits, thus repairing the effects of previous inroads on the stores of protein in the body.

High levels of nonprotein nitrogen in the blood are, of course, sources of concern to the clinician. As Peters points out, a positive nitrogen balance cannot be interpreted as evidence of inability on the part of the kidney to excrete protein waste products; nor is a negative balance a sign that the patient is overcoming the effects of such a retention. The nitrogen balance and the level of the blood nonprotein nitrogen are only indirectly dependent on the amount of protein in the diet and are only partly determined by the functional state of the kidney. The rate of nitrogenous metabolism in these cases appears to be the chief determinant of the level of blood nonprotein nitrogen. In the Yale studies the latter has been elevated only in periods when the metabolism was relatively high and usually when there was a negative nitrogen balance. Increasing dietary protein can then be expected to raise the nonprotein nitrogen of the blood only if it raises the protein metabolism of the body.

4. Urea and Uremia, editorial, J. A. M. A. **77**: 1496 (Nov. 5) 1921; Historical Facts Regarding Urea, ibid. **78**: 1057 (April 8) 1922; Where Is Urea Formed? ibid. **78**: 1540 (May 20) 1922; Conditions Attending the Excretion of Urea, ibid. **80**: 1073 (April 14) 1923; The Liver and Urea Formation, ibid. **83**: 1336 (Oct. 25) 1924; Urea as a Diuretic, ibid. **85**: 2036 (Dec. 26) 1925.

5. Peters, J. P., and Bulger, H. A.: The Relation of Albuminuria to the Protein Requirement in Nephritis, Arch. Int. Med. **37**: 153 (Feb.) 1926.

6. Volhard, F.: Die doppelseitigen hämatogenen Nierenkrankheiten, 1918. Volhard, F., and Fahr, T.: Die brightsche Nierenkrankheiten, Berlin, 1914. Fahr, T.: Virchows Arch. f. path. Anat. **239**: 32, 1922.

7. Fisher, Irving; and Fisk, E. L.: How to Live, ed. 18, New York, Funk and Wagnalls, 1925, p. 261.

When such an increase contributes only to the restoration of depleted tissue, it has no such effect. In any event, the day for "depleting" nephritic patients over long periods of time seems to have passed. Adequate nutrition seems to be mostly a blessing, even in nephritis.

GASTRIC ACIDITY

More than a century has elapsed since William Prout presented experimental proof for the contention that the acidity of the gastric juice, by that time a recognized fact, is due to free hydrochloric acid.[1] In his communication to the Royal Society[2] is outlined, step by step, the chemical procedure leading to the evidence on which his significant conclusions were based. The hydrochloric acid was accounted for by the difference between the total chloride and that combined with fixed bases and ammonia. Simple and convincing as Prout's results appear, they were not generally accepted until the extensive studies of Bidder and Schmidt had confirmed them.

Two significant series of investigations had their genesis in these early experiments. One was concerned with the correlation of the quantity of gastric acid secreted with the kind of food undergoing gastric digestion; the other dealt with the origin and mechanism of the elaboration of the acid secretion. The experiments of Pawlow have emphasized the fact that the concentration of gastric hydrochloric acid appears to be greater when proteins are ingested than when other types of foodstuffs are consumed; and the current extensive clinical determinations of gastric acidity have been promoted by these studies. On the other hand, there is at present little convincing proof regarding the place from which, or the form in which, the hydrochloric acid enters the stomach. Enzyme action, vital force and opportune, though naive, reversal of well known chemical reactions have all been invoked in an effort to explain the phenomena. The one definite and apparently well founded conclusion is that the chloride of the gastric juice has its origin in the chloride of the circulation.

In recent studies at the Harvard Medical School, Gamble and McIver[3] have again emphasized the importance of the fixed bases in the gastric juice. These investigators have shown that, in juice obtained from Pawlow pouches in animals, there is a striking constancy in the total chloride concentration. When a diet rich in protein is fed, the total chloride concentration does not vary significantly from the average, but the level of fixed base decreases markedly. As a consequence, an increased acidity usually is observed under such conditions. When, on the other hand, a ration poor in protein is given, the fixed base of the gastric juice is increased. This indicates the probability, as the Harvard investigators point out, that with a nearly constant chloride ion concentration, the fixed base level is adjusted in terms of the amount of ingested material capable of binding chloride ion. Since, as these workers further indicate, the chloride concentration in gastric juice is near the value for the total fixed base in blood, it appears that there is a total ionic equilibrium between plasma and gastric juice. Part of the process of secretion of hydrochloric acid in the stomach may thus be a mass action phenomenon with the food protein playing the part of a base as it would at the existing hydrogen ion concentration.

There are repeated instances of similar "indirect activities" in physiology: oxidation not involving oxygen; hemoglobin carrying carbon dioxide without combining with it; and the activity of antienzymes. Perhaps the long sought explanation for the secretion of acid in the stomach is to be found not in the appearance of acid ions but in a movement of basic ions.

1. Smith, A. H.: The Centenary of a Unique Discovery, Science **17**: 238, 1923.
2. Prout, W.: Philosophical Tr., 1824, p. 45.
3. Gamble, J. L., and McIver, M. A.: Proc. Soc. Exper. Biol. & Med. **23**: 439, 1926.

Current Comment

OIL OF WINTERGREEN—A WARNING

Among the substances listed in Useful Drugs[1] is methyl salicylate, more familiarly known as oil of wintergreen, and most commonly used in salves or liniments for external application. When thus absorbed or when taken internally, as is sometimes recommended, the drug produces the effects of salicylic acid or the salicylates. Essentially identical doses are suggested. Quantities of 1 Gm. (15 grains) of oil of wintergreen are repeated every hour or two until "maximal permissible amounts" are given, from 6 to 8 Gm. being required to induce symptoms indicative of the limit of tolerance. Salicylates and closely related compounds have a widespread use as analgesics and antipyretics; and they are among the drugs that the laity not infrequently ventures to employ in self-medication. Where this degree of "familiarity" occurs, dangers of improper use always exist. This is clearly emphasized in a recent report of Wetzel and Nourse[2] indicating, what does not seem to be generally recognized, that methyl salicylate in moderate amounts is a powerful poison. While deaths due to this drug have never resulted from its therapeutic use, instances of untoward effects following accidental or intentional self-administration have been reported. In reviewing the known cases, Wetzel and Nourse ascertained that fatal poisoning may be produced by relatively small amounts of methyl salicylate. Absorption of less than 15 cc. has repeatedly resulted in death. The unexpected toxicity of this drug may be ascribed in part to its comparatively greater lipoidal solubility and in part to the fact that it suffers less destruction within the body after its absorption, when compared with salicylates. In view of the

1. Useful Drugs, prepared under the direction and supervision of the Council on Pharmacy and Chemistry of the American Medical Association, Chicago, American Medical Association, 1925.
2. Wetzel, N. C., and Nourse, J. D.: Wintergreen Poisoning, Arch. Path. & Lab. Med. **1**: 182 (Feb.) 1926.

foregoing circumstances, Wetzel and Nourse believe that the therapeutic use of methyl salicylate should be confined to external administration in the form of a liniment or an ointment; and they point out that Sollmann believes this mode of administration is sometimes more effective than when the drug is given internally. From the standpoint of public welfare, the conclusions of the Cleveland clinicians deserve repetition: Access to oil of wintergreen should be made impossible for children and for persons ignorant of its poisonous properties. A further danger exists in the form of the extract and the spirit of wintergreen, both of which may be in demand because of their alcoholic content.

ARE ENZYMES PROTEIN IN NATURE?

Interest in the physiologic potency of substances that act in great dilution has been accelerated in recent years. The thousands of calories that are requisite for the day's work scarcely arouse more enthusiasm in the student than does the consideration of the almost infinitesimal quantities of certain substances on which our bodily well being seems likewise to be dependent. The alphabetical array of vitamins, the various debated hormones, the enzymes with which digestion and probably other biologic processes are concerned, not to mention other factors such as an occasional fraction of a milligram of iodine, are attracting the attention of the layman as well as that of the scientist. The enzymes represent the longest known "potencies" for producing large effects through small amounts of matter. Naturally there has long been more than a little curiosity as to what these unique substances actually are. From the early history of their investigation it has been realized that they are closely associated with proteins if, indeed, they are not actually albuminous in nature. To assert, as is sometimes done, that enzymes represent the catalytic power of matter in a colloidal state does not promote our understanding of their chemical make-up very much. Enzymes are formed from living matter, and their solutions as usually prepared give the reactions of proteins. However, as Falk [1] has pointed out, the question comes up here again as to whether the compositions as shown by such analyses do not represent merely the source of the enzyme material. The enzyme property might well be only a small part of even the purest preparation that has been separated, and the analyses which have been given only show the general composition of the medium, if this term may be used, which carries or accompanies the enzyme. Nitrogenous substances, mainly of protein nature, form a part at least of all enzyme preparations. In the course of his efforts to "purify" enzymes, Willstätter has lately questioned the conclusion that certain enzymes, at least, are protein in nature. A reinvestigation of the subject by Sherman [2] and his co-workers at Columbia University, in the case of pancreatic amylase as a type, confirms his earlier conclusion that the enzyme either is of protein nature or contains protein as an essential component. This is not the place to review the details of the evidence. It helps us to understand why antiseptics that act chemically on proteins are enormously more destructive of the enzyme than are the antiseptics of the lipoid-dissolving type.[3] Sherman confronts us with the startling announcement that his purified pancreatic amylase has digested as much as 4,000,000 times its weight of starch and formed as much as 2,800,000 times its weight of maltose. This great enzymic activity was shown at a dilution of 1 : 100,000,000, whereas the most delicate tests for protein are probably not valid at dilutions greater than about 1 : 100,000. Thus the failure of protein reactions in solutions enzymically active does not show, as many writers assume, that the enzyme is of other than protein nature, since, as in this case, the enzymic activity may constitute a test a thousandfold more delicate than any reaction that can be employed as a test for the presence of protein material.

1. Falk, K. G.: The Chemistry of Enzyme Actions, New York, Chemical Catalog Company, 1921.
2. Sherman, H. C.; Caldwell, M. L., and Adams, M.: Further Experiments on the Purification of Pancreatic Amylase, Proc. Soc. Exper. Biol. & Med. **23**: 413 (March) 1926.
3. Sherman, H. C., and Wayman, M.: J. Am. Chem. Soc. **43**: 2454, 1921.

UREA AND THE LIVER

Not long ago a group of investigators [4] at the Mayo Foundation furnished evidence that the production of urea is entirely dependent on the functioning of the liver in the body; at any rate, urea formation evidently ceased when this large glandular organ was extirpated. The technic of the research was brilliant and the demonstration so cogent that this contribution is likely long to remain one of the classic studies in experimental physiology. The conclusions to which they led seem to be established beyond unfavorable criticism. Nevertheless, it is gratifying to note, in recent observations by Morgulis,[5] a confirmation of the significant thesis as to the specific rôle of the hepatic cells in relation to urea. The argument has been advanced that, to prove the liver to be the predominant place for urea formation, it is necesssary to show that during the early stages of the absorption of amino-acids the increase in the urea content of the blood precedes the increase in its content of amino-acids. As Morgulis formulated the question, it is clear that a preliminary rise in amino-acid nitrogen would not necessarily preclude the possibility of the liver's being the specialized organ for deamination and urea formation, whereas the rise in urea nitrogen preceding a rise in amino nitrogen would furnish positive proof of the liver's important rôle as an organ of urea formation. The tests of Morgulis at the University of Nebraska College of Medicine demonstrate that after feeding protein products the urea nitrogen of the blood "rises either before there is an appreciable increase in the blood amino-acids, or, when the rise is concomitant, the urea nitrogen increase is much more striking." In this connection Morgulis ventures the suggestion that what we generally designate as "urea formation" may in reality not represent a single process at all. It is not improbable that the deamination of the amino-acids and the synthesis of urea may be independent processes. It may not be amiss to repeat an earlier statement in

4. Bollman, J. L.; Mann, F. C., and Magath, T. B.: Studies in the Physiology of the Liver, VIII, The Effect of Total Removal of the Liver on Urea Formation, Am. J. Physiol. **69**: 371 (July) 1924.
5. Morgulis, Sergius: Blood Changes During Digestion, with Special Reference to Urea Formation, J. Biol. Chem. **66**: 353 (Dec.) 1925.

THE JOURNAL:[6] In two years, chemists throughout the world will celebrate the centenary of Wöhler's classic synthesis of urea—the first compound of biologic origin to be duplicated synthetically in the laboratory without the intervention of "vital" processes. May we not hope that the celebration will be enriched by a more complete understanding of how urea is synthesized by nature—in the liver?

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Personal.—Dr. Lester B. Rogers, formerly medical director of the U. S. Veterans' Bureau, has accepted the position of medical director of the St. Francis Hospital, San Francisco.

Physician Sentenced.—Dr. Earl Harlan, Colusa, was found guilty of violation of the Harrison Narcotic Law, it is reported, and was sentenced to three years in a federal prison, March 13.

Health at San Diego.—Telegraphic reports to the chamber of commerce from sixty-nine cities with a total population of about 29,000,000 for the week ending May 1 indicate that the highest mortality rate (22.1) was for San Diego, and, that the rate for the group of cities was 14.4. The mortality rate for San Diego for the corresponding week last year was 18.7, and for the group of cities, 13.7.

University News.—Stanford University Medical School recently received $1,000 from Dr. Morris Herzstein for the establishment of a lectureship on the diseases of the Pacific Basin.——Dr. Frederick L. Reichert of Johns Hopkins University Medical School, Baltimore, has been appointed associate professor of surgery in the Stanford University Medical School, beginning with the year 1926-1927.

DISTRICT OF COLUMBIA

Personal.—Dr. Hubert Work, secretary of the interior, and former president of the American Medical Association, was reelected president of the Medical Veterans of the World War at the annual dinner at Dallas, Texas, in April.

Hearings on Antivivisection Bill.—Hearings were held, May 6, before a senate committee on the bill introduced by Senator Fletcher of Florida, which would prohibit vivisection among dogs in the District of Columbia, the territories and our insular possessions. Among those who appeared in opposition to the bill were Dr. Reid Hunt, professor of pharmacology, Harvard University Medical School, Boston; Major Henry J. Nichols, Army Medical Corps; Lieut. Comdr. Joseph R. Phelps, Navy Medical Corps; John S. Buckley, chief, pathologic division, Bureau of Animal Research; Alice C. Evans, Mrs. Ella A. Enlows, Hygienic Laboratory, and Dr. Victor C. Vaughan, chairman of the medical section of the National Research Council.

Bureau of School Hygiene Proposed.—The establishment of a bureau of school hygiene in the health department of the District of Columbia is proposed in a bill introduced, May 3, by Congressman Begg of Ohio. The bureau would provide medical examinations for all pupils in public and private schools of the district; medical examinations for teachers in public schools; sanitary inspections of schools and school equipment, and nutrition classes. The bill is the outgrowth of an investigation begun by the Monday Evening Club, which showed that Washington is far behind other cities in safeguarding the health of school children. In commenting on the bill, Congressman Begg said: "Today the development of health is recognized by all educational leaders as one of the primary objects of all education. Cities throughout the country recognize the great importance of this work, but in this movement the capital of our nation is far behind. The situation calls for serious attention."

6. The Liver and Urea Formation, editorial, J. A. M. A. 83: 1336 (Oct. 25) 1924.

FLORIDA

Health at Jacksonville.—Telegraphic reports to the department of commerce from sixty-seven cities with a total population of about twenty-nine million for the week ending April 17 indicates that the highest mortality rate was for Jacksonville (22.4), and that the mortality rate for the group of cities was 15.8. The rate for the corresponding week last year in Jacksonville was 14.9 and for the group of cities as a whole, 14.5.

ILLINOIS

Resolution About Anesthetics.—The Rock Island County Medical Society, Moline, passed a resolution, May 11, reiterating, among other things, that the giving of anesthetics is the practice of medicine, and resolving that it shall be unethical for any member of that county society to employ any one but licensed and qualified physicians to administer anesthetics except under supervision in emergency.

Society News.—Dr. Augustus G. Polhman, professor and director of the department of anatomy, St. Louis University School of Medicine, St. Louis, gave an illustrated lecture before the Peoria Medical Society, Peoria, May 4, on "An Interpretation of Rudimentary Organs in the Human Body."——Dr. George E. Shambaugh, Chicago, was guest of honor at a dinner given by the Morgan County Medical Society, May 3.——The Medical and Dental Arts Club, Chicago, will give a dinner at the Sherman Hotel, May 27, 6:30 p. m.; members may bring with them as guests of the club other physicians and dentists.

LOUISIANA

The "Grace Grey" Commissioned.—The new boat of the Louisiana State Board of Health, *Grace Grey*, will make its first inspection trip of the Louisiana oyster beds next week; the boat is 48 feet long.

"Dr. Remington" Sentenced.—Charged with representing himself as an agent of the U. S. Public Health Service and of the department of justice, William E. Krebs of Ohio, alias Dr. R. M. Remington, alias Andrew B. Walker, was found guilty by a jury in New Orleans, April 13, and sentenced to two years in the federal penitentiary at Atlanta, Ga., it is reported; on the strength of his misrepresentation, Krebs is said to have been able to cash a draft on a bank which did not exist.

Society News.—The Orleans Parish Medical Society voted to raise its dues, beginning March 1, to a dollar and a half a month. The board of directors of the society has voted to set aside $250 annually from the increase in dues, to be used to invite some prominent speaker to deliver an oration, to be known as the "Stanford E. Chaille Oration."——Dr. Alfred P. Crain has been elected president of the Shreveport Medical Society, which society has appointed a committee to make arrangements for a modern medical library to be housed in the Shreveport Memorial Library.

Roentgen-Ray Department Dedicated.—A banquet was held at the Touro Infirmary, New Orleans, April 27, to celebrate the completion of the new roentgenologic department, which was made possible through a donation by the daughters of the late Emanuel Sternberger, in memory of whom the donation was made. Drs. Rudolph Matas, New Orleans, James T. Case, Battle Creek, Mich., Emanuel Libman, Columbia University College of Physicians and Surgeons, New York, and Mayor O'Keefe, New Orleans, were among the speakers. The new department has separate rooms for general radiography, fluoroscopy, cystoscopy and deep roentgen-ray therapy.

Personal.—Dr. David A. Lines has resigned as collector of internal revenues at New Orleans, effective, May 1.——Dr. Stanford Chaille Jamison has been elected president of the New Orleans Tuberculosis and Public Health Association; Drs. David L. Watson and J. George Dempsey were elected vice presidents of the association.——Dr. William Johnson, New Orleans, was elected president of the Louisiana Child Finding and Home Society, April 27.——Dr. Lucian H. Landry, New Orleans, has been reelected president of the Tulane Alumni Association.——Dr. William Scheppegrell has been reelected president of the New Orleans Zoological Society.

Record Rainfall Damages Hospital Supplies.—A rainfall in New Orleans of 9.08 inches in the twenty-four hours following May 2 exceeded all previous records of the Weather Bureau for May, and caused damage estimated by the *Times Picayune* at more than $100,000. Water burst open the basement doors of the Southern Baptist Hospital, damaging supplies to the extent of about $60,000 and flooding the

basement to the depth of more than 4 feet. Visitors and others were marooned in the hospital for the night, the hospital grounds also being submerged to a depth of about 2 feet. This deluge was surpassed in New Orleans in 1883, however, when the rainfall for a twenty-four period amounted to 9.22 inches.

MARYLAND

Deaths from Rabies.—Of the seven deaths from rabies in Maryland from 1911 to 1925, four, says the state department of health, occurred in 1925. There were 183 persons who were given Pasteur treatment in 1925, or more than double the number treated in any previous year. Not any of the four persons who died in 1925 had received the Pasteur treatment, and not one of those who took the treatment developed the disease.

Tuberculosis Institute.—Dr. William H. Welch, director, Johns Hopkins School of Hygiene and Public Health, gave the opening address at the regional institute for tuberculosis workers, April 12. Meetings were held twice daily for about two weeks and attended by persons engaged in tuberculosis work in Maryland, Pennsylvania, New Jersey, New York, West Virginia, South Carolina, Colorado and the District of Columbia. Among the other speakers were Philip P. Jacobs, Ph.D., publicity director of the National Tuberculosis Association; Dr. Martin F. Sloan, president, Maryland Tuberculosis Association, and Dr. William J. McConnell, connected with the Philadelphia Health Council.

Annual Conference of Health Officers.—At the annual conference of health officers and boards of health of Maryland to be held at Johns Hopkins School of Hygiene and Public Health, Baltimore, May 28-29, under the auspices of the state board of health, Governor Ritchie will make the opening address; among others, Dr. R. Eugene Dyer, assistant director, Hygienic Laboratory, Washington, D. C., will discuss "Scarlet Fever Immunization"; Dr. George H. Ramsey, deputy commissioner, Michigan State Department of Health, Lansing, "Diphtheria Immunization as an Administrative Public Health Problem"; Dr. Robert H. Riley, chief, Maryland Bureau of Communicable Diseases, "The Typhoid Situation in Maryland." Physicians, health officers and any other interested officials have been invited to attend the conference.

MASSACHUSETTS

Dr. Lund Resigns.—Dr. Fred B. Lund has resigned as surgeon in chief of the Boston City Hospital, according to the Boston *Herald*, to become chief of the surgical staff of the Carney Hospital. Dr. Lund has been connected with the Boston City Hospital for nearly thirty years.

State Sanatorium Opened.—More than 300 physicians, students and others attended the formal opening of the Lakeville State Sanatorium, April 27, and made a tour of the buildings and the model dairy connected with the sanatorium. Among the speakers were the governor, Alvan T. Fuller; Dr. James S. Stone, president of the Massachusetts Medical Society, and Dr. Linsly R. Williams, director of the Massachusetts Tuberculosis Association.

Society News.—Dr. George L. West, Newton Center, has been elected president of the Middlesex South District Medical Society, and Stephen M. Biddle, Cambridge, secretary. ——At the annual meeting of the Berkshire District Medical Society, Pittsfield, April 29, Dr. Richard Lewisohn, New York, spoke on "Transfusion by the Citrate Method: Technic, Indications and Results."——Dr. Linsly R. Williams, managing director, National Tuberculosis Association, among others, addressed the annual meeting of the Massachusetts Tuberculosis League, April 26, Boston; at the meeting Dr. Kendall Emerson, Worcester, was elected president of the league, and Dr. Frederick T. Lord, Boston, vice president.——Dr. Leo M. Davidoff, Boston, gave an illustrated lecture at the annual meeting of the Essex South District Medical Society, Gloucester, May 11, on "A Trip to the Far North with MacMillan."

MINNESOTA

Hospital News.—The Oakland Park Sanatorium is to ereet a $30,000 addition; this institution is the State Tuberculosis Hospital of Pennington, Marshall, Roseau and Red Lake counties.——The Ancker Hospital, St. Paul, is constructing a new five story contagious department which will have a capacity of 280 beds.

Society News.—Dr. Willis C. Campbell, professor of orthopedic surgery, University of Tennessee College of Medicine, Memphis, addressed the Minnesota Orthopedic Club, April 6, at the University of Minnesota, Minneapolis, on "Immobilization of Joints."—Dr. E. T. F. Richards addressed the Academy of Medicine, April 14, at the Town and Country Club, Minneapolis, on "Infectious Mononucleosis"; Dr. John G. Cross addressed the Minnesota Academy of Medicine at the Town and Country Club, Minneapolis, May 12, on "The His Bundle and Its Disturbances."

NEW HAMPSHIRE

State Medical Meeting.—The one hundred and thirty-fifth annual meeting of the New Hampshire Medical Society will be held at the state armory, Concord, May 25-26, under the presidency of Dr. Thomas W. Luce, Portsmouth. Among the guests will be Dr. Charles H. Mayo, Rochester, Minn., who will speak Wednesday on "Developmental Anomalies, Especially of the Genito-Urinary Tract"; Dr. William H. Park, New York, "Use of Scarlet Fever Toxin and Antitoxin in the Prevention and Cure of Scarlet Fever"; Dr. James P. O'Hare, Boston, "Chronic Nephritis and Hypertension," and Dr. Walter W. Chipman, Montreal, on "Etiology and Treatment of Dysmenorrhea." Governor and Mrs. Winant will entertain members, ladies and guests at their home, Tuesday evening; there will be automobile excursions for the ladies, Wednesday, and the annual banquet Wednesday evening at the Eagle Hotel. The state association of local health officers and the state association of registered nurses will meet in Concord at the same time as the medical association.

NEW JERSEY

Home for Babies.—The Ocean City Seashore Home for Babies will open its wards for the season, June 1, and will close, September 15. Information as to the type of patients admitted may be obtained from the medical director, Dr. Henry H. Perlman, 1904 North Franklin Street, Philadelphia.

Society News.—Dr. Edward A. Strecker, professor of neurology, Jefferson Medical College, Philadelphia, addressed the Camden City Medical Society, May 11, on "The Psychology of the Normal Child."——Dr. Stanley M. McGeehan, Atlantic City, reported a case of granuloma inguinale before the Atlantic County Medical Society, May 14. ——Dr. Louis C. Williams addressed the Hunterdon County Medical Society at Flemington, April 27, on "Treatment of Erysipelas by Heliotherapy."

State Medical Meeting.—The annual meeting of the Medical Society of New Jersey will be held at Haddon Hall, Atlantic City, June 17-19. Among other things, there will be a symposium on cardiovascular renal disease opened by Dr. Frederick M. Allen, and a symposium on urology opened by Dr. Hugh H. Young, of the Brady Clinic, Johns Hopkins University, Baltimore; Dr. Samuel W. Lambert, New York, will direct a moving picture, "Exhibition of Heart Lesions." A program of unique entertainment has also been arranged.

Chiropractors in Court.—The Board of Medical Examiners of New Jersey submits the following list of chiropractors who have been brought recently into court, charged with practicing medicine without a license. All but four, who were put in jail, paid fines:

Charles H. Witter, Dunellen.
Raymond O. Danese, Hudson Heights (put in jail for twenty days).
Floyd Farrell, Hackensack.
Regina B. Heim, Newark.
Cyril H. Guterl, Jersey City.
Roy Pierce, New York.
Alson J. Walker, Orange (put in jail for fifteen days).
Mary Bumby (tried in Elizabeth District Court and jailed for one day).
Clarence U. Pole, Audubon.
William Joseph, Collingswood.
Jack M. Blank, Camden.
Thomas S. Dukes, Camden.
Andrew J. Corey, Verona.
Joseph Bowley, Burlington.
Charles R. Breamer, Pleasantville (put in jail for ten days).
Hugh M. Condie, Camden.
Kathryn Mikle, Fairview.

NEW YORK

Medical School Announces Opening.—The University of Rochester announces that the formal opening of its School of Medicine and Dentistry will be, October 25-26. There will be scientific medical conferences on these days; papers will be presented by Prof. Friedrich Müller, Munich; Dr. Charles J. Martin, president of the Lister Institute of London, and other leaders in medical science. Formal invitations will be issued in September.

Governor Signs New Medical Practice Act.—Governor Smith has signed the new medical practice act, recently

passed by the state legislature and known as the Webb-Loomis bill. This legislation, drafted, primarily, to protect the public against unqualified and illegal practitioners, was described and commented on in THE JOURNAL, May 1, p. 1354. ——The governor announced, May 17, that he had vetoed a bill which would have permitted chiropodists and podiatrists to use the title "doctor" or its abbreviation.

New York City

Resolution on Commercialized Lectures.—The executive committee of the New York Electrotherapeutic Society has unanimously passed the following resolution:

WHEREAS, Various commercial concerns and enterprises dealing in electrotherapeutic and allied apparatus are with increasing frequency holding public lectures in New York, which are in effect and in fact nothing more than lectures advertising their goods; and

WHEREAS, Audiences to those lectures are not limited to members of the medical profession; and

WHEREAS, The lectures themselves are not carefully selected or given, and

WHEREAS, The audience must necessarily be misled; be it therefore

Resolved By the Executive Committee of the New York Electrotherapeutic Society that the department of health should control such lectures by licenses after due and proper investigation, so that the public may be protected from the aforesaid abuses.

New Vanderbilt Clinic.—President Nicholas Murray Butler of Columbia University announced, May 4, that Frederick W. and Harold S. Vanderbilt have given $500,000 to rebuild the Vanderbilt Clinic in connection with the new medical center which is now in the course of construction. The Vanderbilt Clinic was established in 1886 by the brothers Cornelius, William K., Frederick W. and George W. Vanderbilt. It always has been an integral part of Columbia's work in medicine, and the new institution, President Butler said, will correlate and unite the entire teaching now carried on by the university at the clinic on Amsterdam Avenue and Sixtieth Street, at the outpatient department of the Presbyterian Hospital at Madison Avenue and Seventieth Street, and at Bellevue Hospital. President Butler also announced the receipt of another anonymous gift of $125,000, to be expended at the discretion of the board of trustees for the benefit of the medical school.

Personal.—Michael M. Davis, Jr., Ph.D., executive secretary of the committee on dispensary development, United Hospital Fund, has gone to Europe to study outpatient clinical methods.——Dr. James F. Cooper of the American Birth Control League recently made a speaking tour through New England addressing numerous medical societies and other organizations on the subject of birth control; April 4, Dr. Cooper addressed the Orange County Medical Society at Orlando, Fla; March 30, a meeting of physicians at Roanoke, Va.; March 31, a special meeting in Johnson City, Tenn.; March 29, the county medical society at Cumberland, Md.; April 1, the Medical Society of Chattanooga, Tenn., and April 2, the Roane County Medical Society, Harrison, Tenn.——Dr. Joseph J. Eller has been elected president of the Manhattan Dermatological Society for the ensuing year. ——Dr. Manuel Uribe Troncoso has been promoted to professor of ophthalmology in the New York Post-Graduate Medical School and Hospital.——Dr. Charles C. Williamson, formerly director of information service of the Rockefeller Foundation, has been appointed director of the libraries of Columbia University.——Dr. Alexander Lambert has been elected a director of the New York Tuberculosis and Health Association.——Queens University, Kingston, Ontario, Canada, conferred the honorary degree of LL.D. on Dr. William H. Rankin, May 6, who graduated from that institution thirty-seven years ago.

OREGON

Society News.—Dr. Frank W. Lynch, professor of obstetrics and gynecology, University of California Medical School, gave the annual lecture on gynecology before the Portland Academy of Medicine, April 8, and was guest of honor at a dinner given by the president, Dr. Stuart H. Sheldon, at the Arlington Club.

Personal.—Dr. George E. Fortmiller, Albany, has been elected president of the Albany General Hospital Association, succeeding the late Dr. James P. Wallace.——Dr. Harry Y. Spence, Eugene, has been appointed Red Cross instructor in first aid for the Pacific Division.——Dr. Ernst A. Sommer, Portland, has been reelected president of the Oregon Public Health League, and Dr. Frederick D. Stricker, Portland, secretary, reelected.

Illegal Practitioner Fined.—"Dr." George Kirkpatrick, it is reported, was fined $100 in the district court at Portland, April 12, after a jury had found him guilty of practicing medicine without a license. A complaint was filed against Kirkpatrick by the Oregon Public Health League, it is said, when he was found to be selling some "cure" for ten dollars a bottle. Kirkpatrick's "Pul-Bro-Tu", a consumption cure, so called, was the subject of an article under the propaganda department of THE JOURNAL, March 6.

Hospital News.—Drs. Herbert C. Eastland and Charles Billington are in charge of the new emergency hospital opened in Reedsport.——The Pacific Christian Hospital at Eugene has just added twenty-four beds by remodeling the fifth floor. ——The La Grande Hospital has installed a new roentgen-ray outfit.——The Dallas Hospital, Dallas, announces that it will construct a thirty room addition, and that Dr. William R. Taylor, Forest Grove, will be added to the staff.——The Klamath Indians have protested against the establishment of a tuberculosis sanatorium at their agency.

PENNSYLVANIA

Hospital for Crippled Children.—Construction work on the first units of the state hospital for crippled children will start in the near future. The site for the hospital is in Lancaster County just west of Elizabethtown on the Harrisburg and Lancaster Pike; it comprises about 245 acres, of which about 60 are woodland; also a modern dairy barn, which will be retained by the state. The water supply will be from the Elizabethtown Water Company; the institution will be connected with the new sewage disposal plant erected in Elizabethtown, and electricity is already on the grounds.

State Welfare Department.—A pamphlet describing the work of the state welfare department was recently issued by the public Charities Association of Pennsylvania, 311 South Juniper Street, Philadelphia. The state welfare department was created by an act of the state assembly in 1921, which united and coordinated a number of different bureaus and added the duties of supervising all agencies for the care of children. The new department took over the duties of the old Board of Charities, the Committee on Lunacy, the Mothers' Assistance Fund and the Prison Labor Commission. The state welfare department now has four bureaus: (1) Bureau of Children, (2) Bureau of Assistance, (3) Bureau of Mental Health and (4) Bureau of Restoration. This pamphlet may be obtained, free of charge, from the public Charities Association.

Philadelphia

"Travel Trip" of Southern Internists.—The Southern Interurban Clinical Club of Internists made its fifth "travel trip," May 6-7, when it was the guest of the University of Pennsylvania Hospital, the Philadelphia General Hospital and the Jefferson Hospital; clinics, demonstrations and papers were presented. Dr. Isaac I. Lemann, New Orleans, is president of the club, and Dr. Bryce W. Fontaine, Memphis, Tenn., secretary-treasurer.

Personal.—At the recent dedication of the Philadelphia County Medical Society's new building, Dr. James M. Anders spoke on the efforts of the society, covering a period of fifteen years, to secure a suitable home.——Dr. William H. Perkins sailed from New York, May 4, for Europe to study medical teaching methods before taking up again his post in Siam under the Presbyterian Board of Foreign Missions; Dr. Perkins left Siam in 1923 to do postgraduate work at Jefferson Medical College; later he was on the staff of the Philadelphia General Hospital.

Society News.—Drs. Nathaniel W. Winkelman and George Wilson addressed the Philadelphia Psychiatric Society, May 14, on "A Clinicopathologic Study with Especial Reference to the Significance of the So-Called Typical Laboratory Findings in General Paresis", and G. E. Partridge, Ph.D., and Dr. Clifford B. Farr on "Current Conceptions of Bodily Structure in Relation to Temperament and Character."—— About 350 members of the Philadelphia Medical Club visited the Naval Academy, Annapolis, Md., May 13, where, following a luncheon at Carvel Hall, they were escorted on an inspection tour by naval officers.

Seminars on Physical Therapy.—The Philadelphia County Medical Society is conducting a series of five seminars on physical therapy at its new home, Twenty-First and Spruce streets, the purpose of which is to discuss informally the various aspects of the subject. Dr. Ralph Pemberton was in charge of the May 14 seminar, "Thermotherapy and Hydrotherapy"; Dr. Theodore H. Weisenburg, May 21, "Massage and Manipulation with Demonstrations"; Dr. Frederick A. Cochran, Jr., will be in charge, May 28, "Light Therapy";

Dr. William T. Johnson, June 11, "Diathermy"; the subject for June 4 will be "Radiology"; the speakers will be announced later.

TENNESSEE

Fiftieth Anniversary.—The Memphis and Shelby County Medical Society celebrated its fiftieth anniversary, May 13, at the University Club, Memphis, where a buffet supper was served. Dr. Elmer E. Francis spoke on "The History of Medical Education in Memphis"; Dr. John M. Maury, on "The History of Hospitals in Memphis"; Dr. Richmond McKinney, "History of Medical Journalism in Memphis." Other speakers were Drs. Benjamin F. Turner and William Krauss.

Personal.—Dr. Edward D. Mitchell was elected president of the Women's Hospital of Memphis at the recent annual meeting.——Dr. Martin H. Fischer, head of the department of physiology, University of Cincinnati College of Medicine, will deliver the address at the graduating exercises of the University of Tennessee Colleges of Medicine and Dentistry and School of Pharmacy, June 7, in the city auditorium at 8 o'clock.——Dr. John R. Caulk, St. Louis, who was entertained at dinner, April 6, by members of the Memphis Urologic Society, addressed the Memphis and Shelby County Medical Society that evening.

VIRGINIA

Personal.—Dr. Vincent W. Archer has been promoted from instructor to assistant professor of roentgenology on the faculty of the University of Virginia Department of Medicine, and Drs. Henry B. Mulholland and James E. Wood, Jr., from instructors to assistant professors in internal medicine; the promotions are effective at the next session.

New Medical Organizations.—The Princess Anne County Medical Society has been reorganized; meetings will be held monthly at the Seaside Cottage Sanatorium, Virginia Beach. ——Charlotte County physicians have applied for a charter for the Charlotte County Medical Society, of which Dr. Charles W. Tucker, Drakes Branch, was elected president at the meeting, April 16; the Cumberland County Medical Society has also applied for a charter; at the organization meeting, Dr. Carter Weisiger, Cumberland, was elected president.——The women physicians of Richmond recently issued invitations to all women physicians in the state who are members of the Medical Society of Virginia to attend an organization meeting, April 5, at which the Virginia Medical Women's Club was organized; Dr. Mary B. Baughman, Richmond, was elected president, and Dr. Cora Z. Corpening, Virginia Beach, secretary-treasurer.——Physicians of ten counties met, April 17, at Farmville, and organized the Central District Medical Society of Virginia. Among the guests at the meeting were Dr. William L. Harris, Norfolk, and Miss A. V. Edwards, Richmond, president and secretary, respectively, of the Virginia State Medical Society. Dr. Paulus A. Irving, Farmville, was elected president of the new society; Dr. Ray A. Moore, Phenix, vice president, and Dr. William E. Smith, Farmville, secretary-treasurer.

WASHINGTON

Personal.—Dr. Minard Allison, Monroe, has been appointed physician to the state reformatory at Monroe, to succeed the late Dr. Harry K. Lum.——Dr. William R. Leverton has resigned from the U. S. Veterans' Hospital at Tacoma to take charge of the physiotherapy department of the Tacoma General Hospital.——Dr. Frank Dwyer, formerly of Sedro-Woolley, has been appointed assistant superintendent of the Western State Hospital at Fort Steilacoom.——Dr. Charles S. Hood, Ferndale, has been elected president of the Whatcom County Physicians and Surgeons Club.

Society News.—Dr. E. Frank Chase, Seattle, has been elected president of the Puget Sound Academy of Ophthalmology and Otolaryngology; Drs. John A. Johnson, Tacoma, and Spencer S. Howe, Bellingham, vice presidents, and Dr. Morrill J. Morris, Seattle, secretary-treasurer.——A ten-story medical arts building, costing $250,000, will be constructed at Yakima.——The Medical Section of the King County Medical Society, Seattle, will devote the May 17 and June 21 meetings to a symposium on pulmonary tuberculosis, the former being on the anatomic pathology and the latter on treatment.——Dr. Sidney S. Oppenheimer, president of the Washington State Medical Association, and Dr. George A. Downs, of the public health league, addressed the Walla Walla County Medical Society, April 9.

WEST VIRGINIA

State Medical Meeting.—At the fifty-ninth annual meeting of the West Virginia State Medical Association, Morgantown, May 25-27, under the presidency of Dr. James R. Bloss, Huntington, Dr. Orrin S. Wightman, New York, will discuss "Periodic Health Examination of the Apparently Healthy," and Dr. Southgate Leigh, Norfolk, Va., "Problems Confronting the Profession"; Dr. John H. J. Upham, Columbus, Ohio, a trustee of the American Medical Association, will deliver the oration on medicine, Tuesday evening, and Dr. Chester R. Ogden, Clarksburg, the oration on surgery; Dr. Walter G. Stern, Cleveland, Ohio, will speak, Wednesday morning, on "Some Problems of Modern Orthopedic Surgery." Among other visiting speakers will be Dr. Edward A. Looper, Baltimore; Dr. John B. McMurray, Washington, Pa.; Dr. Paul Titus, Pittsburgh; Dr. Leo Brady, Baltimore; Dr. Verne C. Hunt, Rochester, Minn.; Drs. Joseph E. Moore and Albert E. Goldstein, both of Baltimore, and Dr. Magnus A. Tate, Cincinnati. There will be demonstrations daily at the West Virginia School of Medicine from 2 to 3 p. m. The annual banquet will be Thursday evening.

GENERAL

Automobile Fatalities.—Reports to the department of commerce from seventy-nine large cities for the four weeks ending April 24 show that 424 persons were killed by automobiles, as contrasted with 350 for the preceding four weeks. Eleven cities had no automobile fatalities in the four weeks preceding April 24; Erie, Lowell, New Bedford, Utica and Waterbury had no fatalities during the last eight weeks, and New Bedford and Waterbury had none during the last sixteen weeks.

Accidents in Coal Mines in March.—There were 169 deaths among employees due to accidents in coal mines in March, according to the bureau of mines; 132 of these deaths were in the bituminous mines and thirty-seven in the anthracite mines. There was an explosion, March 8, at Eccles, W. Va., which killed nineteen men and made the total number of major disasters in 1926, to date, seven; for the same period in 1925, there were only three major disasters in mines. The records of the bureau of mines for the first three months of 1926 show 658 fatalities, while for the corresponding period last year they show 630.

The Incubus of the Harrison Narcotic Act.—THE JOURNAL, May 8, commented on a bill which has been introduced in the U. S. Senate "to strengthen" the Harrison Narcotic Act. It was pointed out that this bill would impose additional duties on physicians with respect to the use of narcotics, increase the penalty for violations of the act, and limit the right of physicians to use narcotics. In another section of the same issue of THE JOURNAL the bill was discussed at length. Now a bill of the same purport (H. R. 11612) has been introduced in the House of Representatives. As was stated in THE JOURNAL, the hearings on these bills will be awaited with interest.

Lost—List of Two Hundred and Fifty Names.—At the annual dinner of the Medical Veterans of the World War during the convention at Dallas, Texas, more than 250 physicians gave their names to the secretary, Dr. Arthur T. McCormack, to be enrolled as members. On the way home on the train, these names and other things were stolen from Dr. McCormack's grip, and it is impossible to enroll these members until the list is recovered. Dr. McCormack requests that all those who gave him their names at Dallas, and others who desire, forward their names to him at Louisville, Ky. This organization will soon begin publishing a quarterly which will be devoted almost entirely to the personal history of physicians who served in war.

Society News.—The National Association for the Study of Epilepsy will hold its twenty-fifth anual meeting at the Waldorf-Astoria Hotel, New York, June 7-8, immediately preceding the meeting of the American Psychiatric Association.——At the annual meeting of the American Society of Clinical Investigation, May 3, Atlantic City, N. J., Dr. Eugene F. Du Bois, Cornell University Medical School, New York, was elected president, and Dr. Joseph T. Wearn, Boston City Hospital, Boston, secretary; the next annual meeting will be at Atlantic City, May 2, 1927.——At the annual meeting of the American Gastro-Enterological Association, Atlantic City, N. J., May 3-4, Dr. Franklin W. White, Boston, was elected president, and Dr. John Bryant, 338 Marlborough Street, Boston, secretary; the next annual meeting will be at Atlantic City, May 2-3, 1927.

Homicides in 1925.—In continental United States in 1925 there were about 10,100 homicides, according to the *Statistical Bulletin* of the Metropolitan Life Insurance Company, which is fourteen times the number that would have occurred if the homicide rate of England and Wales had prevailed in this country, and six times as many as would have occurred had the homicide rate of Canada prevailed. The *Bulletin* says that in a recent year the city of Chicago alone had more than twice the number of homicides that occurred in all England and Wales. The Metropolitan Insurance Company has endeavored to discover what legal action is taken when homicides occur among its own policyholders, and has facts available in 611 homicides which occurred in 1922-1924. Deducting eighty-six "justifiable" homicides, there were 525 assailants answerable to the law; of these fifty-four committed suicide and thirteen died before they were arraigned; of the remaining 458 assailants, eighty-four had not been captured within a year after the crime was committed, and of the 374 who were apprehended, 108 were released by grand juries or magistrates, as no case could be made out against them; eight were declared insane. There were actually brought to trial 258 or 56.3 per cent of the original group of 458, and of these, 187 were found guilty, 170 being sentenced to prison, eight sentenced to death, and nine released either by a fine or on a suspended sentence.

Women's Organizations Fight for Sheppard-Towner Act.—Concentrated efforts are being made by women's national organizations throughout the country to have the Senate reject the amendment of the Senate Committee on Education and Labor to reduce the time for extension of the Sheppard-Towner Infancy and Maternity Law. The Senate committee recognized the objections made by the medical profession against the principles involved in the Sheppard-Towner Law and, in its report to the Senate, insisted that the expenditure by the federal government of more than a million dollars each year in this work should terminate, June 30, 1928. The committee further recommended that no federal funds should after that date be made available for the states to carry on this work under the arrangements in the law requiring a state to match or appropriate an equal sum from state funds to that appropriated by the federal government. This unanimous action of the Senate committee is in direct accord with the attitude of THE JOURNAL and of the medical profession generally throughout the country.

No less than ten women's organizations have pooled their interests in a national campaign of propaganda to defeat the amendment of the Senate committee. These national women's organizations include the National Board Y. W. C. A., National Council of Jewish Women, National Consumer's League, National Association of Colored Women, National Council of Women, General Federation of Women's Clubs, National League of Women Voters, American Association of University Women, National Women's Trade Union League, National Congress of Parent-Teachers, and Women's Christian Temperance Union.

Members of the Senate are receiving hundreds of letters and telegrams as a result of this combined offensive of these women's organizations. It may be that the amendment of the committee will be imperiled as a result of the political influence thus brought to bear on members of the Senate. Diligent inquiry made of various senators does not disclose the fact that physicians have written or telegraphed their senators urging that the Senate committee amendments be adopted when the bill comes before the Senate for final action. Unless senators are informed of the request of the medical profession that this amendment be retained, it is quite probable that the committee will not be able to muster enough votes in the Senate to retain the amendment in the bill in its final passage.

CANADA

Association for Study of Feebleminded.—The fiftieth annual meeting of the American Association for the Study of the Feebleminded will be held in Toronto, June 3-5, at the King Edward Hotel. The prime minister of Ontario and the mayor of Toronto will deliver addresses of welcome. Among others, Dr. Thomas J. Heldt, of the neuropsychiatric division of the Henry Ford Hospital, Detroit, will speak on "The Neuropsychiatric Importance of the Personality Reactions of Mental Defectives"; Charles B. Davenport, Ph.D., director, department of eugenics, Carnegie Institute of Washington, Cold Spring Harbor, New York, "The Nature of Hereditary Mental Defect"; Dr. Groves B. Smith, Detroit, "Cerebral Accidents of Childhood—Their Relation to the Problems of Mental Deficiency," and Dr. George K. Pratt, of the National Committee for Mental Hygiene, on "The Application of Mental Hygiene Methods to the Feebleminded." The annual dinner will be held Friday evening, when the president of the association, Dr. Arthur R. T. Wylie, superintendent, Institution for Feebleminded, Grafton, N. D., will deliver his address.

FOREIGN

Ophthalmologic Congress.—The Oxford Ophthalmological Congress will meet at Keble College, Oxford, England, July 15-17; on Thursday the discussion will be on "Sympathetic Ophthalmia"; Friday the Doyne Memorial Lecture will be delivered by Dr. Thomas Henderson on the "Anatomy and Physiology of Accommodation in Mammalia." An afternoon will be devoted to demonstrations in the scientific and commercial museums.

British Association to Publish Another Journal.—The council of the British Medical Association at its April meeting decided to publish the *Journal of Neurology and Psychopathology* as and from the issue of May, 1926. This journal was started in 1920 to take the place of the former *Review of Neurology and Psychiatry*, which was published successfully from 1903 to 1918; under the auspices of the British Medical Association, the journal should find a larger sphere of usefulness. Dr. Samuel A. Kinnier Wilson is the chief editor. The journal will appear quarterly; orders (30s.) should be sent to the Financial Secretary, British Medical Association, Tavistock Square, London, W. C. 1.

Prize for General Practitioners.—The British Medical Association will award the first "Sir Charles Hastings Clinical Prize" of 50 guineas for general practitioners to Dr. Norman Porritt of Llandudno for his clinical study on "The Abdomen in Labor." The prize will be presented to Dr. Porritt at the annual meeting of the association in July at Nottingham. There were twenty clinical studies submitted by physicians for the prize this year. The council conveyed to Sir Humphry Rolleston and Prof. W. E. Dixon an expression of appreciation and gratitude for their report on the essays submitted for this prize. The competition is announced also for 1927, and the following conditions are imposed:

1. Any member of the association who is engaged in general practice is eligible to compete for the prize.
2. The work submitted must include personal observations and experience of the candidate collected in general practice, and a high order of excellence will be expected. If no essay entered is of sufficient merit, no award will be made.
3. Essays, or whatever form the candidate desires his work to take, must be sent to the Medical Secretary, British Medical Association House, Tavistock Square, London, W. C. 1, not later than Dec. 31, 1926, and the prize will be awarded at the annual general meeting of the association, to be held at Edingburgh in July, 1927.
4. If any question arises in reference to the eligibility of the candidate or the admissibility of his essay, the decision of the council on any such point shall be final.
5. Each essay must be distinguished by a motto, and must be accompanied by an envelop marked with the same motto, and including the candidate's name and address.
6. The candidate who gains the award shall, if the council so desires, publish his paper in the *British Medical Journal* or deliver a lecture on the subject thereof at a meeting of the association.

Personal.—The fiftieth professional anniversary has recently been celebrated by the emeritus professors, H. Vierordt, Tübingen; M. von Gruber, Munich, and P. Zweifel, Leipzig. ——Prof. G. Hoppe-Seyler, Kiel, son of the founder of the *Zeitschrift für physiologische Chemie*, has been made emeritus professor, as also Prof. E. J. Moure, of the chair of ear, nose and throat diseases, Bordeaux. A souvenir medal is to be presented to the latter; Dr. Junca, cours d'Alsace-Lorraine, Bordeaux, is in charge of subscriptions for the purpose.—— Prof. M. Couto, Rio de Janeiro, delivered an address on "Visceral Polysteatosis" at the Paris medical school recently, and he was the guest of honor, with Professor Austregesilo, at a banquet later.——Prof. F. Müller, Munich, surprised the recent German Internal Medicine Congress by his denunciation of the "overproduction of medical articles, the inability of the younger generation to condense their articles for publication, and the lack of rigorous discrimination by the editors in selecting articles to publish."——The medical secretary of the British Medical Association, Dr. Cox, who has been in South Africa for several months in the interests of the association, returned home, April 12. Of the 1,400 medical men in South Africa, Dr. Cox is said to have seen nearly 700 of them in groups of from three to seven; he is said to have done a great organizing work.——A complimentary dinner was given to Sir Robert Bolam by the council of the British Medical Association, April 7, in order to congratulate him on the honor recently conferred by the king.——The late Dr. J. Basil Hall, of Bradford, England, past president of the British Medical Association, left an estate valued at £29,823.

Government Services

Navy Orders

Lieut. Commdr. Richard H. Miller was placed on the retired list, April 10.——Lieut. Donald E. Dement has tendered his resignation from the medical corps.——Lieuts. William E. Crooks, Thomas L. Morrow, Robert H. Snowden, Charles E. Morse and John W. Vann have qualified for promotion to the rank of lieutant commander.——Lieut. Commdr. William Chambers on completion of a course of instruction at the Naval War College, Newport, R. I., will be transferred to the Bureau of Medicine and Surgery of the Navy Department, Washington, D. C., for duty.——Lieuts. William S. Leavenworth and William D. Davis, Medical Corps, U. S. Navy, have been found qualified for promotion to the rank of lieutenant commander.——Following the graduating exercises, May 1, at the Naval Medical School, Washington, D. C., Lieut. Comdr. Robert G. Davis, on completion of his course of instruction at the Massachusetts General Hospital, Boston, will be assigned to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.——Capt. Richmond C. Holcomb, now attached to the U. S. S. *Mercy*, has been assigned to represent the medical department of the navy at the Sesqui-Centennial Exposition, Philadelphia, which opens in June.——Comdr. Frank E. Sellers, Naval Hospital, Norfolk, Va., has been assigned to the U. S. S. *Tennessee*, and Comdr. Clarence F. Ely of the U. S. S. *Tennessee* has been assigned to the naval training station, Hampton Roads, Va.

Army Personals

The resignation of Capt. Luther H. Kice as an officer of the medical corps of the army was accepted, April 24, and that of Capt. Harold O. Brown was accepted, effective, May 10.——Edward R. Weidlein, M.A., director, Mellon Institute of Industrial Research, University of Pittsburgh, and R. A. Gortner of the University of Minnesota have been appointed research consultants in the chemical warfare service of the U. S. Army.——Dr. Melvin T. Means, Claremore, Okla., first lieutenant, medical reserve corps, has been appointed first lieutenant in the regular army medical corps with rank from Jan. 9, 1926; also Dr. Harold W. Kohl, Denver, with rank from January 27, and Dr. Fritjof H. Arestad, San Francisco, with rank from January 29.

Examination for Entrance Into U. S. Public Health Service

There will be examinations, July 12, held in Washington, D. C., Chicago, New Orleans and San Francisco for entrance into the regular corps of the U. S. Public Health Service. Candidates who successfully pass an oral, written and clinical examination before a board of medical officers, and who undergo a physical examination will be recommended for appointment in the service by the President. Candidates must be not less than 23 nor more than 32 years of age, and be graduates of some reputable medical college and have one year of hospital experience or two years of professional practice. Permission to take the examination may be obtained from the Surgeon General, U. S. Public Health Service, Washington, D. C.

President Signs Bill to Retire Nurses

The President has signed a bill for the retirement of army and navy nurses. The bill places army and navy nurses on the same status, with respect to retirement privileges, as has been heretofore allowed to commissioned officers of the army and navy. It provides that after twenty-five years' service, army and navy nurses will receive 75 per cent pay; or, after reaching the age of 50, with twenty years' service, retirement pay allowance shall be 60 per cent. The peace-time strength of the nurse corps in the army and navy is approximately 500 in each of the corps. During the war the number was raised in the army to 22,000 and in the navy to 1,500. May 14, in the office of Rear Admiral Edward R. Stitt, Surgeon General of the Navy, General Merritte W. Ireland, Surgeon General of the Army, presented the pen with which the President signed the bill to Miss Anna G. Davis, assistant superintendent of the navy nurse corps. The presentation was made in recognition of the work of Miss Davis in behalf of the passage of the bill.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 1, 1926.

The Coordination of Research Libraries

The Association of Special Libraries and Information Bureaus, which has grown out of the two conferences of persons engaged in handling special information, has been formally inaugurated. The objects are to examine, foster and coordinate the activities of special libraries, information bureaus and similar services; to act as a clearing house for these services; to develop the usefulness and efficiency of special libraries and information bureaus under whatever titles they may function; and, generally, to promote, whether by conferences, meetings or other means, the adequate dissemination of systematic published information. The first work of the association will be the preparation of a directory of special libraries and information bureaus in the United Kingdom. This work, which is to be financed by the Carnegie United Kingdom Trustees, is estimated to cost about $10,000. It is hoped to arrange for mutual cooperation and assistance between institutions such as commercial houses, manufacturing concerns, newspapers, banks and insurance offices, technical and scientific societies and political, social and educational organizations, and the staffs concerned, in order to develop to the utmost the effective use of existing collections in national, public and special libraries. It is proposed to admit ordinary members and associate members at subscriptions of $10 and $5, respectively. The subscriptions will be the same for individuals as for institutions, but the committee desires that membership shall be institutional rather than individual. The association wishes to establish free trade in published information, but there will be no obligation on any librarian to supply information which he feels he is not justified in giving.

Marriage and Hereditary Deafness

That persons who are afflicted with hereditary deafness should not marry each other was one of the dicta laid down by Dr. R. Scott Stevenson in a lecture at the Institute of Hygiene. Deafness he thought more serious than blindness, for while a blind child could be educated at the ordinary schools, a deaf child could not be educated with normal children. Heredity as a cause of deafness was rather a thorny subject. Congenital syphilis was a common cause among children of the poorer classes, but it was impossible to deal with the prevention of syphilis until its notification and treatment were made compulsory. There was, however, a common form of hereditary deafness that had no relation whatever to syphilis. To prevent this type it was necessary to take a long view and to lay down the law that persons should not marry one another at all if affected by hereditary deafness, and that it would be better if these did not marry with persons with deaf relatives. It was a curious fact that the deaf tended to marry the deaf, presumably because the bond of their mutual affliction tended to bring them together, and because of the ease with which they communicated with each other.

An Airplane Medical Service

Australia may be the first country to institute a regular service of flying physicians and dentists. The national commission on health is considering a scheme by which the airplane mail lines might assist in bringing rapid medical aid to any one dangerously ill in the remote bush areas. The Australian inland mission of the League of Red Cross Societies is seeking to install a simple, standardized type of

wireless apparatus that may be worked effectively by any nontechnical possessor in the "black blocks." The railways in the six Australian colonies tap scarcely more than the eastern and southern coastal strips of a territory roughly as big as the United States, and physicians at present have to do much of their diagnosis and treatment by telegraph. Often the sick person has many miles to travel to reach a telegraph station from which he can solicit skilled advice. When he has related the symptoms and the physician has prescribed as best he can, the patient has next to find a center possessing a medicine chest. Standard drugs and simple surgical appliances are kept at the scattered repair posts and police stations, and having arrived at one of these, the sick man follows the physician's orders to the best of his intelligence. Many perplexing cases need personal examination for proper treatment, and the inland mission is mapping out districts in central Australia that could be served by physicians transported by air over areas with radii of 200 miles. A system of filling stations may be devised still further to increase the range of the flying physician.

Proposed International Society of Medical Practitioners

At a meeting of the Federal Committee of the British Medical Association in Australia, the honorary secretary read a letter from the medical secretary of the British Medical Association, intimating that at the time the new headquarters in Tavistock Square were opened, five delegates of foreign medical organizations had met informally in his office to discuss the proposal to inaugurate an international society of medical practitioners. As a result, a letter of invitation was drawn up by Dr. F. Decourt and sent to the presidents and secretaries of representative medical organizations in various countries. The object of the proposed society is to serve as an international bureau of information on matters affecting medical practice in any country. The organization would be an inexpensive one, since it would be unnecessary to appoint a council or committee. All that would be required would be a secretary and a small clerical staff in a properly equipped office.

Fatal Septicemia from Performing a Postmortem Examination

In previous letters, two cases were recently reported in which young physicians lost their lives in performing postmortem examinations. In the following case a man, only 22, of great promise, came to a similar end. He took an examination in pathology, March 18. As the youth had come without rubber gloves, the professor lent him a pair. They were perfectly sound, but after the examination the professor learned that they had been torn. He made no mention of injury. The young man was admitted to the hospital, March 22; the third finger of the left hand was incised. Despite treatment he became progressively worse, and died from septicemia, probably resulting from an injury he received while making a postmortem examination.

Arsenic on American Apples

The finding of arsenic in dangerous quantities on American apples has had a disastrous effect on their sale in the English market. The difficulty with American apples is the necessity for late spraying. There are three broods of the codling moth, and in order to destroy the pest American growers have been obliged to spray the trees when the fruit is fully formed. At home we spray only before the flower appears, and again immediately after the petals have fallen. The practice is stated to be similar with Australian growers, who find no need to spray after the apples have formed. Before the next season for American apples begins it is considered probable that some arrangement will be made, perhaps by extensive washing in the particularly dry belts which are most susceptible to contamination, to guarantee the crops to be free from arsenic. Canadian growers, many of whom have been as much affected by the scare as those in the United States, are already considering whether late spraying should not be altogether prohibited.

The British Medical Association and Nursing Homes

Evidence was given on behalf of the British Medical Association before a select committee of the house of commons, which is taking evidence on the desirability or otherwise of nursing homes being subjected to registration and inspection. The attitude of the association was stated to be that, while it was not against registration of nursing homes in principle, it was opposed to some of the provisions in the bill before parliament. It suggested that local authorities should set up special committees on which the medical profession should be represented, either by cooption or by appointment, and urged that the case sheets of patients should not be accessible to any but physicians. The association contended that no nursing homes run by physicians should be subject to registration, nor should those attached to, or associated with, voluntary hospitals. In the case of nursing homes run by private individuals for profit, there was no control and no responsibility by any one.

The Australian Aborigines: Proposed Model Native State

A petition has been circulated among state and federal members of parliament by Colonel Genders, the originator and secretary of the South Australian movement for the creation of a large model aboriginal state in central Australia. The movement has for its object the saving of the race, which is disappearing before the advance of pastoral settlement and railway penetration, both of which seriously diminish the natural food resources of the natives. The petition urges that the model state should be eventually managed by a native tribunal with a native administrator, and have representation in the federal parliament, similar to that of the Maoris, for it is now acknowledged that the Australian blacks have considerable mental development, and are capable of learning industries. Cannibalism and cruel rites would be prohibited, but otherwise native laws and customs would operate, and whites would not be allowed to enter the model state unless duly accredited.

The Cancer Review

At a meeting of the British Empire Cancer Campaign, it was announced that the first number of a publication to be known as the *Cancer Review* of the campaign would be issued during May and would continue thereafter as a monthly publication. It would embrace monthly reports of all cancer research work being carried out throughout the world, in abstract form, and would, it was hoped, effectively link up the work of all cancer researchers.

The Prevention of Accidents

The second annual meeting of the National "Safety First" Association has been held. The home secretary, Sir William Joynson-Hicks, presided. He said that the association had made wonderful progress, particularly on the public safety side. The number of street accidents reported emphasized the need for their activities. For 1925 they were 115,473, or 17,000 more than in 1924. Fatal accidents reached nearly 4,000; 340 more than in 1924. Last year, on the average, more than ten persons were killed, and more than 300 injured, every single day on our roads. In London, however, there were twenty fewer street fatalities than in 1924. In the areas covered by their branches there had been a net decrease of fifteen in the number killed, as compared with 1924.

With reference to the industrial side of the movement, he assured the meeting of the warm support of the government. But in spite of everything that they could do in making

regulations for the safety of factory organization, they would still have a majority of accidents in the country which could not be touched by regulations. The thoughtlessness of the human factor caused more than half of the accidents in our industrial organizations, and it was the human factor that they must endeavor to educate.

Sir Herbert Blain, vice president, said that during every year 750,000 people were killed or injured by accidents in this country. For the five years that had succeeded the war there were 200,000 more British people injured than there were wounded in the war itself. Those were enormous figures, and when it was realized that 75 per cent of the accidents were preventable by a little care and forethought, he believed it would be felt that the association was endeavoring to do work that was for the good of the community as a whole.

ITALY

(From Our Regular Correspondent)

March 31, 1926.

A Graduate Course in Physiotherapy

At the University of Naples, an advanced course in hydrology, electroradiology and physiotherapy was organized this year. The course is intended for physicians and graduates in chemistry and pharmacy, and more particularly for those who intend to practice medicine in sanatoriums located at mineral springs, either as physiotherapeutists or as public health officers.

Annual Meeting of the Italian Hydrologic Society

The Associazione medica idrologica italiana held its customary annual general assembly under the chairmanship of Professor Devoto, the president of the society, and Professor Piccinini, regional president of the Sezione alta Italia.

Course in Hygiene and Infant Welfare

The course in hygiene and infant welfare, the fifth to be held, was begun last month at Rome in the E. Maraini Preventorium, under the auspices of the Italian Red Cross and under the direction of Professor Valagussa.

Congress on Industrial Medicine

The Congress on Medicina del Lavoro, or Industrial Medicine, will be held at Genoa, October 12-15, and, for the first time, will be organized by the Scuola d'igiene sociale, established by the commune of Genoa in 1922. The president and secretary of the executive commitee are, respectively, Professor Ramoino and Dr. Crosa. The topics on the program are: (1) The individual conditions and changes in the organs of persons suffering from electric shock; (2) condition of health of Italian emigrants who return home; (3) vocational guidance from the medical, industrial and operative points of view; (4) microchemical and biologic reactions in relation to the industries, and (5) the workshop from the hygienic point of view.

The Prophylaxis of Smallpox

The minister of the interior is establishing more efficient prophylaxis against smallpox, and is creating registration places for the first vaccination and revaccination. In localities in which the service has not been rigorously conducted, an investigation will be instituted.

The Provincial Antituberculosis Societies

Antituberculosis societies have now been created in almost all the Italian provinces. The minister of the interior has set forth the duties of the societies. Their activities should be sustained, and, when necessary, given financial aid, by the provincial administrations. As campaign centers, the societies are urged, above all, to organize antituberculosis dispensaries, which ferret out tuberculous patients, assist them, and inform them of the institutions where they may receive aid. The work of the dispensary should be supplemented by that of visiting nurses who go to the homes and the working places of the sick. For the recovery of patients the societies should endeavor to have available a sufficient number of beds in care-taking centers. At the same time, the societies should promote preventive and prophylactic work. The establishment of homes for infants, permanent rural colonies, open-air schools, work and school colonies, and the placement of predisposed infants, carefully selected, in healthy rural families (the Grancher system), will aid in the accomplishment of the ends desired. The societies should give particular care to sanitation in the home, and should promote the construction of sanitary dwellings for the working classes. Finally, a publicity campaign should be launched for the education of the masses in hygiene by means of motion pictures, lectures, tracts, and by the establishment of an "antituberculosis day" and of a "flower festival."

The Centenary of Francesco Redi

February 18, was celebrated the tercentenary of Francesco Redi—physician, poet and naturalist—who remains today one of the most typical prototypes of Italian science of the seventeenth century. Physician to the grandducal court of Florence, his views, as handed down by contemporaries, show him to have been a keen observer and an excellent diagnostician. He was the first to demonstrate that the venom of snakes is not active if administered by the gastric route. He asserted the therapeutic value of quinine against the opinions of physicians of his time. He taught that simplicity in therapy is a precious quality, and many of his recommendations are applicable today.

BUENOS AIRES

(From Our Regular Correspondent)

March 29, 1926.

Antivivisection Propaganda

The Association for the Prevention of Cruelty to Animals intends to ask for the passage of a law limiting vivisection. Its reports show complete ignorance of working methods of biologic laboratories; for instance, of the fact that anesthesia is employed in all experiments, and that strict surgical technic is applied when survival of the subject is expected. One of the views advanced is that the only experiments justified are those intended to determine some unknown or doubtful question, since after certain knowledge is acquired, repetition of the experiment involved is merely cruel or abusive. This demonstrates absolute disregard of the fact that a question is never closed and that experimental work is essential for medical teaching. Let us hope that this new campaign will not harm scientific research.

Assault on a Professor

The agitation that gradually has spread among university students, since they secured an electoral share in university management, has reached such extremes that some undergraduates, especially the most inefficient ones, devote practically all their time to school politics. The many concessions of the governing bodies have been dexterously exploited by the students, who now can present themselves for examination every three months, and any number of times. Many of them have thus been rejected as many as ten consecutive times. Until a short time ago, the third (and then the fourth) failure automatically caused dismissal of the student. Of late, however, those failing seem to blame the examining board for their misfortune. In the last four or five years, the custom has prevailed of sending offensive or threatening anonymous letters to any professor who fails students. Such conditions reached a climax when Prof. B. A. Houssay was hit from

behind with an iron bar. In addition to a wound in the temporal region, a fracture of the right hand was caused. An inquiry showed that the crime had been instigated by a 40 year old student, who had been held back several times, who has a police record, and who has been connected with several disturbances in the medical school. This outrage caused indignation among both the teaching staff and the student body. The faculty members signed a protest, and disciplinary measures are expected on the part of the dean and governing board.

Hospital Enlargement

The new buildings of the Salaberry Hospital, on which the city authorities have spent 4,000,000 pesos (about $1,600,000), have just been opened. The new services include surgery, obstetrics and gynecology, pediatrics, administration and dietetics. The new orthopedic, laryngology and ophthalmology departments, and the morgue and kitchen pavilions, of the Pirovano Hospital will be finished next month. The cost will be 800,000 pesos (about $320,000). April 12, the Rawson Hospital, after a complete reconstruction, will be thrown open to the public. This hospital will have 1,800 beds, one of the largest hospitals here.

Personal

Prof. G. Fichera of Pavia has taken charge of a surgical pathology class, under Prof. Arce.——Dr. A. Ceballos, assistant professor of clinical surgery, has gone to the United States, to study conditions there, and present his arthroplasty work.——Prof. M. R. Castex has given a number of lectures in Germany and has met with a favorable reception.——The following have just returned from Europe: Dr. E. Hug, after completing some studies in physiology at Turin and Berlin; Dr. G. A. Castaño, assistant professor of gynecology; Dr. E. Mariño, assistant professor of medical pathology, and Dr. Inda, who took a course in epidemiology at Hamburg.

VIENNA

(From Our Regular Correspondent)

April 13, 1926.

The Retirement of Professors Riehl and Dimmer

With the end of the summer semester, the so-called *Ehrenjahr,* or honor year, which was granted Professor Riehl the director of the First Dermatologic Clinic at the University of Vienna, comes to a close. Professor Riehl is past 70 years old, and is compelled by the law requiring retirement of university professors at the age of 70 to give up his post. His enforced resignation awakens many regrets that the retirement law should prevent such eminent men as Riehl from continuing their activities. The situation is made worse by the fact that the natural successor to Riehl, the Vienna dermatologist Professor Kyrle, died, some time ago, quite unexpectedly. Concerning the fate of the First Eye Clinic, of which Prof. Dr. Dimmer, recently deceased, was the director, no definite action has been taken as yet. At first it was reported that for economic reasons the clinic was to be closed. However, the united protest of academic circles, and certain keen-sighted government officials, succeeded in frustrating any such designs. Scarcity of funds, however, makes difficult the execution of plans.

Care of the Tuberculous in Austria

In a recent number of the official *Mitteilungen des Volksgesundheitsamtes,* there appeared a report, edited by Dr. Eisenschimmel and Director Lukesch, on the present status of the tuberculosis care-taking centers in Austria, and giving an account of their activities in 1925. The report reveals that there are only fifty-nine tuberculosis care-taking centers in operation. These serve only one fifth of the territory to be covered, and provide for approximately half of the total population. Each center must care, on the average, for about 62,000 persons. During 1925 more than 1,500,000 persons appeared at the centers for consultation. Of new patients, 11 per cent, or 3,279, proved to be seriously ill. One of the chief tasks undertaken by the care-taking centers was to minimize the spread of infection. As high as 70 per cent of the members of families exposed have been found to be tuberculous. Nurses of the care-taking centers found that of 5,294 cases the patient shared his bed in 2,836 cases with other adults and in 2,458 cases with children. In more than 40 per cent of the cases, there were, besides the patient, three constant occupants of the living room; in 23 per cent of the cases, there were four other occupants, and in only 7 per cent was the patient associated with only one other person. In 8 per cent of the cases, the dwelling consisted of more than two rooms; in 35 per cent, of two rooms; in 46 per cent of only one room, and in 11 per cent, two or three families lived in one room. By the efforts of the care-taking centers, 7,648 patients were provided beds in institutions in which they received medical treatment; 3,763 were placed in homes for convalescents, and 28,942 persons were examined or assisted.

The Sanitary Conditions of Vienna, Winter of 1925-1926

Health conditions in the capital for October to March were favorable up to about the middle of February. The weather was cold and dry during December and January. In February, an epidemic of influenza set in. There was, therefore, an increase of mortality in March, which is still observable in April.

The Value of the Bacteriologic Examination in Trachoma

At a recent session of the Vienna Ophthalmologic Society, Dr. Pillat presented a paper in which he discussed his microscopic researches in thirty-eight cases looking toward clarification of the diagnosis of trachoma. The difficulty of differentiating conjunctivitis follicularis from trachoma by clinical methods alone should give the bacteriologic examination greater importance. During an epidemic, Pillat observed among 200 children examined fifty-eight suspicious cases, in thirty-eight of which he made microscopic examinations. Of these, thirty-five, or 92 per cent, showed typical trachoma inclusions, whereas three cases in which the clinical manifestations pointed to trachoma showed no cell inclusions. Clinically, the thirty-eight positive cases were, in part, moderate and, in part, very mild, so that it was impossible to differentiate them otherwise from ordinary cases of follicular catarrh. Follicles were present in almost all of them; in 88 per cent, the conjunctiva bulbi was not affected, the cornea was never involved, and the secretion was slight. In four cases, the inclusion bodies were exceedingly numerous; in thirteen cases, there were from ten to forty inclusion bodies; in ten cases from two to ten, and in seven cases only one inclusion body. In fourteen cases, several (as high as six) preparations had to be prepared.

BELGIUM

(From Our Regular Correspondent)

April 29, 1926.

The New Law Pertaining to Occupational Diseases

A new type of service in factories has been organized, which is intended more particularly for industries in which toxic substances such as lead and zinc are handled. It includes the installation of sanitary equipment and supplies, and a complete medical service. No charge will be made for the use of the equipment. The heads of industries will entrust the regular inspection of employees and the sanitary equipment of their factories to physicians approved by the minister of labor. They will keep a register showing the names of workmen who have been absent on account of sickness; also the dates and the duration of such absences. The physicians will inspect the sanitary condition of the factory

equipment at least once a month. They will question (without compelling them to leave their posts) those workmen who appear to be failing in health. After each of their inspections, the physicians will make a written report of observations in special registers, but will exclude information involving professional secrecy. On their general visits, the physicians will examine more particularly: (1) workmen who present symptoms that may be due to occupational disease; (2) workmen who show recurrence of such symptoms in two months after the symptoms have been made to disappear; (3) workmen who have been absent from work on account of sickness, since the last visit of the physician; (4) workmen whose health appears doubtful, and (5) workmen who request such examination. They will record their findings on cards to be supplied by the heads of industry. The employers will, through their physicians, institute a general revision of the personnel of their establishments whenever they are requested so to do by the chief inspector of mines, or by the medical inspector of labor. The employers or managers will pay all the costs of medical inspections, and deductions will not be made from the wages of workmen for loss of time incurred by such inspections. Records will be preserved for at least five years. The registers will be open to examination by government inspectors charged with the execution of the law.

The law contains also provisions pertaining to general hygiene and industrial organization. For the better taking of samples of fumes and residual gases, shuttered openings will be provided at easily accessible points in the walls of chimneys or other conduits for the evacuation of fumes. Devices will be installed to carry off fumes, to dilute the gases thrown off by the ovens, and, as far as possible, to effect the condensation of harmful material.

Welfare Work in the Belgian Congo

The Union coloniale belge has responded to the appeal of the colonial minister and has organized special courses on the prophylaxis of malaria and trypanosomiasis. The directors of the great enterprises concerned have supported the initiative of the Union coloniale belge, and have required all their agents to take part in the course. The movement is one of the surest means of accomplishing results in the crusade against tropical diseases.

A New Publication

A new monthly review that has been launched in Belgium is called the M. I. L. review and deals with the financial interests of the medical profession. The device of the new publication is: ***nummis potiri quam servare facilius*** (it is easier to make money than it is to keep it).

The Sterilization of Criminals

Before the Société belge de médecine légale, M. Vervaeck discussed recently the question of sterilization of certain criminals. Sterilization has been advised in cases of hereditary mental disease (dementia praecox, cyclothymia), in the markedly weak-minded (sterilization before puberty); in psychopaths, constitutional epileptics; in incurable toxicomania, and sexual perverts. In all these cases, our knowledge is not sufficiently exact to justify sterilization.

The Queen Elizabeth Foundation

The Queen Elizabeth Foundation is the realization of a project which had its beginning during the war. The queen had observed that the hospitals on the Belgian front were, in truth, medical schools. She expressed the desire that, at the conclusion of the war, there might be founded in Belgium a medical institute in which the activities of the hospitals of the Belgian front might be continued. Such an institute was conceived of as a combination of hospital services and research laboratories. By creating laboratories of all the auxiliary sciences of therapeutics, and by inviting all those interested in research and in new methods to attend the institute, all resources of science could be mobilized against disease. With the collaboration of the Rockefeller Foundation, the laboratories of the queen have been installed temporarily in the hospitals of Brussels under the directorship of Professor Nolf.

BERLIN

(From Our Regular Correspondent)

April 10, 1926.

Industrial Diseases in Relation to Accident Insurance

A decree issued by the federal government, July 1, 1925, provides that not only industrial accidents shall come under federal accident insurance but also such affections as develop owing to industrial injuries and which extend over long periods and are almost imperceptibly cumulative. Advances in medical knowledge of the last decade have furnished the bases for decisions as to the significance and the origin of many occupational diseases. The decree, however, concerns only such industries as come within the scope of federal industrial accident insurance. The new insurance extends, furthermore, only to the diseases that are enumerated in the decree. References to these diseases in the decree are entirely general; for example, we read that industries in which "affections caused by lead, phosphorus, mercury, arsenic, benzene, carbon disulphide, roentgen rays and other forms of radiant energy occur" are compensatable industries. Although such comprehensive designations may open the way to controversy, on the other hand, trade unions and the courts can adapt themselves to changing views of medical science. The connection of an affection with employment in a recognized industry must be shown. The insurance bureau must in all cases have the person who is ill examined by a suitable physician. The decree introduces the so-called *Uebergangsrente*, or temporary benefit. In many of the dangerous industries, the workmen must subject themselves to periodic medical examination. If an insured workman shows signs of an incipient industrial disease, continuance in his employment is often hazardous. However, the workman may not be able to give up this work, for financial reasons. In such cases, the employer may be expected to grant the workman a temporary benefit up to half the amount of the full benefit, on condition that he consent to give up his dangerous employment.

Proposed State Aid for Hospital Patients

The lack of hospital beds in Berlin, and the decreasing number of paying patients in hospitals, have brought up the question of possible changes in hospital provisions for patients of limited means. Professor Gottstein suggested, in a recent address, charging the patients, including those insured in the *Krankenkassen*, for board and room only, and imposing the remaining charges on the city. Gottstein added that, under such a provision, private charitable institutions would have to be protected in some way. Dr. Goldmann suggested that to care for patients who do not need the expensive equipment of the modern hospital, "mild patients hospitals" and caretaking homes might be erected. Goldmann demands further extension of the domiciliary care of patients, a form of service which heretofore has been in the hands of private welfare societies. The domiciliary care of patients relieves greatly the demands on the hospitals. Evidence of the popularity of domiciliary care supplied by the state is furnished by the facts that in 1925 the Evangelisch-Kirchliche Hilfsverband (auxiliary of the Protestant churches) provided domiciliary care for 27,000 patients and the Katholische Charitas-Verband similar care for 34,000 patients in Berlin. In the discussion that followed, objections were raised to Gottstein's demands on the grounds that the cost would be too great.

Marriages

ROLLA L. MCCREERY, Torrington, Wyo., to Mrs. Frances Ramsey of San Francisco, at Sidney, recently.

ALBERT B. MURPHY, Everett, Wash., to Miss Vesta Kruse of Rochester, Minn., at Ellensburg, recently.

HENRY G. MEALING to Miss Lillie May Glover both of Augusta, Ga., March 21.

Deaths

Charles Edward Elliott, Victor, Colo.; University of Vermont College of Medicine, Burlington, 1888; University of Bishop College Faculty of Medicine, Montreal, Que., Canada, 1889; member of the Colorado State Medical Society; for many years mayor of Victor; member of the state legislature; served during the World War; aged 60; died, April 18, of pneumonia.

George Augustus Peck ✠ New Rochelle, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1891; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, and of the American Urological Association; on the staff of the New Rochelle Hospital; aged 59; died, April 23, at Milan, Italy.

John Joseph Mahoney, Jamestown, N. Y.; Niagara University Medical Department, Buffalo, 1896; member of the Medical Society of the State of New York; for twenty years superintendent of public health of Jamestown and for twelve years district state sanitary supervisor; aged 57; died, April 18, of heart disease.

Franklin Freese Lehman, Sandusky, Ohio; University of Michigan Homeopathic Medical School, Ann Arbor, 1891; member of the Ohio State Medical Association; past president of the Erie County Medical Society; for several years county coroner; aged 64; died, April 23, of chronic myocarditis and arteriosclerosis.

Charles Lawrence Orr, Pratts Fork, Ohio; Physio-Medical College of Indiana, Indianapolis, 1891; member of the Ohio State Medical Association; aged 56; died, April 29, at the Athens (Ohio) State Hospital, of cerebral hemorrhage.

Lewis W. Flinn, Wilmington, Del.; Jefferson Medical College of Philadelphia, 1883; Hahnemann Medical College and Hospital of Philadelphia, 1887; on the staff of the Homeopathic Hospital; aged 67; died, April 4, of heart disease.

Lanta Weirick Ford, Syracuse, Ind.; Medical College of Indiana, Indianapolis, 1901; member of the Indiana State Medical Association; aged 51; died, April 9, at the Elkhart (Ind.) General Hospital, of nephritis.

Joseph Howard Langworthy, Leavenworth, Kan.; University of Pennsylvania School of Medicine, Philadelphia, 1907; served during the World War; aged 46; died, March 30, of thrombosis of the coronary arteries.

James Crawford Watson, Georgiana, Ala.; University of Alabama School of Medicine, Tuscaloosa, 1898; member of the Medical Association of the State of Alabama; aged 50; died, March 15, of acute nephritis.

Willard S. Cushman ✠ Baton Rouge, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1900; for fourteen years parish coroner; aged 50; died, March 6, of chronic nephritis.

Emory Hale Connelly, Alberta, Va.; University College of Medicine, Richmond, 1905; member of the Medical Society of Virginia; aged 43; died, March 18, of hemorrhage due to a self-inflicted wound.

Herman Nathaniel Cohen ✠ New Albion, Iowa; Barnes Medical College, St. Louis, 1908; superintendent of the New Albion Hospital, where he died, March 27, of chronic nephritis, aged 38.

William Edward Whitford, De Peyster, N. Y.; University of Vermont College of Medicine, Burlington, 1878; aged 70; died, March 27, at the Hepburn Hospital, Ogdensburg, of heart disease.

Ulysses Augustus Rice, Des Moines, Iowa; King Eclectic Medical College, Des Moines, 1888; aged 82; died, April 10, at the Methodist Hospital of hypertension and cerebral hemorrhage.

Charles Henry Moore ✠ Albany, N. Y.; Albany Medical College, 1887; on the staffs of the Child's, Albany and St. Margaret's hospitals; aged 68; died, February 13, of chronic myocarditis.

Augustus Francis Schafer ✠ San Francisco; Bellevue Hospital Medical College, New York, 1887; aged 61; died, April 29, at the Stanford Hospital, of carcinoma of the stomach.

Alexander R. Shadden, San Augustine, Texas; Vanderbilt University Medical Department, Nashville, Tenn., 1892; Confederate veteran; aged 76; died in April, of chronic bronchitis.

Harold Edwards Bates, Portland, Ore.; Johns Hopkins University Medical Department, Baltimore, 1915; served during the World War; aged 37; died, March 30, of tuberculosis.

William Cady Fawdrey, Lorraine, N. Y.; Albany Medical College, 1885; member of the Medical Society of the State of New York; aged 65; died, April 21, of erysipelas.

Fred B. McGarvey ✠ Cavour, S. D.; University of Tennessee College of Medicine, Memphis, 1900; aged 57; died, March 19, at Highmore, of pulmonary tuberculosis.

Nathaniel Saenger, St. Louis; Missouri Medical College, St. Louis, 1895; served during the World War; aged 53; died, April 28, of melanosarcoma of the scalp.

August Ferdinand Schoen, Mayville, Wis.; Rush Medical College, Chicago, 1883; aged 75; died, March 2, at the Beaver Dam (Wis.) Hospital, of senility.

Ellen Eastman Schenck, Ashby, Mass.; Boston University School of Medicine, 1880; aged 70; died, April 19, at a hospital in Luenburg, of paralysis agitans.

Stephen M. Applewhite, San Antonio, Texas; Medical Department University of Louisiana, New Orleans, 1875; aged 73; died, March 2, of pneumonia.

Alfred M. Michaelis, New York; Cornell University Medical College, New York, 1925; intern, Mount Sinai Hospital; aged 24; died, April 24, of septicemia.

Harry Neville Goff, San Diego, Calif.; McGill University Faculty of Medicine, Montreal, Que., 1893; aged 66; died suddenly, April 6, of heart disease.

Sterling P. Stowers, North Kansas City, Mo.; St. Louis College of Physicians and Surgeons, 1889; aged 64; died, April 21, at Sedalia, of pneumonia.

Alexander T. King, Milwaukee; Chicago Medical College, 1881; member of the Colorado State Medical Society; aged 74; died, March 29, of pneumonia.

James Aloysius Dardas, Bay City, Mich.; Northwestern University Medical School, Chicago, 1909; aged 42; died, April 19, of cerebral hemorrhage.

Charles McKenzie Hay, Atlantic City, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1888; aged 59; died, March 8, of influenza.

John H. Crowe ✠ Virginia, Minn.; Rush Medical College, Chicago, 1901; for twelve years city health officer; aged 58; died, April 17, at Minneapolis.

Hamilton Rush Riddle, Mechanicsburg, Ill.; Rush Medical College, Chicago, 1873; Civil War veteran; aged 84; died, April 17, of bronchopneumonia.

John Desmoines Cleveland, Merrill, Ore.; Northwestern Medical College, St. Joseph, 1892; aged 66; died, March 1, of injuries received in a fall.

George Miller, Richwood, Ohio; Cincinnati College of Medicine and Surgery, 1873; aged 78; died, April 26, at his home in Byhalia, of senility.

James McManus, Lindley, N. Y.; College of Physicians and Surgeons, Baltimore, 1885; aged 66; died, January 5, of pulmonary tuberculosis.

John S. Jordan, Indianapolis; Indiana Eclectic Medical College, Indianapolis, 1887; Civil War veteran; aged 80; died, April 17, of heart disease.

Frank M. Baldwin, Columbus, Ohio; Eclectic Medical Institute, Cincinnati, 1888; formerly a druggist; aged 83; died April 21, of senility.

Herman Goodman, Chicago; University of Berlin, Germany, 1881; aged 70; died, April 1, of chronic interstitial nephritis and myocarditis.

Thomas V. Cahall, Frederica, Del.; Jefferson Medical College of Philadelphia, 1874; aged 74; died, March 14, of cerebral hemorrhage.

Thomas J. McGowen, Vincennes, Ind.; Bellevue Hospital Medical College, New York, 1882; aged 72; died, April 16, of cerebral hemorrhage.

H. E. Keller, Decatur, Ind.; Curtis Physio-Medical Institute, Marion, Ind., 1894; aged 52; died, February 22, of carcinoma of the stomach.

Felix Kalacinski ✠ Chicago; College of Physicians and Surgeons, Chicago, 1898; aged 52; died, April 15, of carcinoma of the liver.

George D. Lain ✠ Sanger, Texas; University of Louisville (Ky.) School of Medicine, 1892; aged 64; died, April 18, of heart disease.

Baron D. Bishop, Monticello, Miss. (licensed, Mississippi, 1882); for many years member of the school board; aged 74; died, March 30.

James H. F. Prentiss, Gary, Ind.; American Medical College, Indianapolis, 1896; aged 67; died, April 18, at St. Mary's Mercy Hospital.

Peyton Smith Pope, Benton, Ill.; University of Tennessee College of Medicine, Memphis, 1877; aged 75; died, in April, of pneumonia.

John Shibley, Gentry, Ark.; Rush Medical College, Chicago, 1886; aged 77; died recently, of hemorrhage, due to gastric ulcer.

E. W. Davis, Lavaca, Ark.; Memphis Hospital Medical College, 1901; aged 57; died, February 1, of carcinoma of the stomach.

James J. A. Edwards, Yeager, Okla.; University of Tennessee College of Medicine, Memphis, 1891; died recently, of paralysis.

George W. Crapo ✠ Terre Haute, Ind.; Medical College of Ohio, Cincinnati, 1875; aged 73; died, April 23, of cerebral hemorrhage.

Oscar Emmett Gourley, Bado, Mo.; Northwestern Medical College, St. Joseph, 1890; aged 61; died, April 16, of pneumonia.

Megerdich Attarian, Suffern, N. Y.; Medical Department of the University of the City of New York, 1885; aged 72; died, March 11.

James W. Parker ✠ Gray, Ky.; University of Louisville School of Medicine, 1894; aged 58; died, April 21, of nephritis.

Newton R. Baldwin, Coldwater, Mich.; University of Michigan Medical School, Ann Arbor, 1875; aged 73; died, April 20.

Robert G. Davis ✠ Hot Springs National Park, Ark.; Jefferson Medical College of Philadelphia, 1901; aged 54; died, April 9.

Patrick Jerome Flynn, Plattsmouth, Neb.; Creighton Medical College, Omaha, 1899; aged 51; died, April 6, of pernicious anemia.

Fleming L. Phillips, Portageville, Mo.; University of Louisville School of Medicine, 1892; aged 55; was shot and killed, May 1.

William Robert Peters ✠ Stanton, Neb.; Rush Medical College, Chicago, 1904; aged 49; died, April 16, of pneumonia.

William J. Zinn, Sherman, Ky.; Medical College of Ohio, Cincinnati, 1857; aged 95; died, April 21, of heart disease.

Charles Wesley Bond, Chicago, Rush Medical College, Chicago, 1925; aged 26; died, April 25, of pneumonia.

William D. Valentine, Spokane, Wash.; Physio-Medical Institute, Cincinnati, 1881; aged 74; died, March 20.

Eston B. Stephenson, Charleston, W. Va.; University of Louisville School of Medicine, 1897; died, April 17.

Jasper Franklin Bryant, Louisville, Ky.; Louisville Medical College, 1885; aged 62; died, April 20, of uremia.

James Alvin Minor, San Antonio, Mo.; Ensworth Medical College, 1885; aged 62; died, April 20, of uremia.

Charles Bauer ✠ Philadelphia; Jefferson Medical College of Philadelphia, 1884; aged 83; died, April 23.

Sydney G. White, Warsaw, Ind.; Baltimore Medical College, 1893; aged 61; died, April 10, of nephritis.

Sarah M. Siewers, Massillon, Ohio; Electic Medical Institute, Cincinnati, 1891; aged 71; died, April 22.

Thomas W. Pomroy, New York; Eclectic Medical College of New York, 1889; aged 93; died, April 18.

William Hobdy, Hamilton, Texas; Illinois Medical College, Chicago, 1902; aged 65; died, February 27.

Edward F. Allen, Fayetteville, Ind. (licensed, Indiana, 1897); aged 87; died, April 30, of senility.

J. W. Heskett, Salem, Neb.; Physio-Medical Institute, Cincinnati, 1874; aged 74; died, April 14.

The Propaganda for Reform

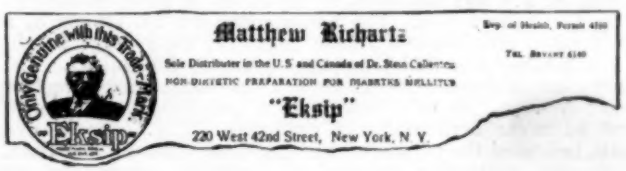
IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

EKSIP FOR DIABETES

A Vicious Piece of Mail-Order Quackery

One Matthew Richartz of New York City is exploiting the sufferer from diabetes in the sale of a nostrum known as "Eksip." Richartz' story is that "the noted Stein-Callenfels, the European specialist," after a life-long study, "amazed other European specialists with his famous discovery," the cure for diabetes known as Eksip. All of which is, of course, sheer buncombe. Richartz says further that his brother was closely connected with this famous individual, and, following Stein-Callenfels' sudden death, the formula of Eksip was turned over to the brother of Matthew Richartz, who has made Matthew the sole proprietor and distributor in America.

The advertising slogan for Eksip is: "No More Dieting! No More Starving! Eat And Get Well!" Richartz gets in touch with his victims, as is usual in mail-order quackery, through the willingness on the part of certain newspapers to share in the profits of quackery. Diabetics are urged to write


Only Genuine with this Trade-Mark
Eksip
Matthew Richartz
Sole Distributor in the U. S. and Canada of Dr. Stein Callenfels
NON-DIETETIC PREPARATION FOR DIABETES MELLITUS
"Eksip"
220 West 42nd Street, New York, N. Y.

for a booklet entitled "Eat and Get Well," which Richartz sends to anyone who asks for it. The booklet contains certain banalities, and quotations from standard works are so presented as to lead the reader to surmise that men like Ruhräh, Friedenwald and von Noorden oppose dieting in the treatment of diabetes. The booklet shows further that the only treatment for diabetes that has proved satisfactory is Eksip, and "in connection with the use of this preparation, no system of diet is given." However, the claims in the newspaper advertisements that lead the sufferer to suppose that he can eat what he likes and as much as he likes, if he takes Eksip, are not sustained in the "Eat And Get Well" booklet. There the victim is told that it is to his own interest "to avoid eating things high in percentage of carbohydrates" until after Eksip has cured the diabetes! The letter, however, which goes with the booklet, contains the following paragraph:

> "The Eksip treatment has produced almost unbelievable results during the short time it has been used in this country. Nothing ever known to medical science has proved such an astounding success in making diabetics well. All diet list theories have been smashed — knocked to smithereens. It is now possible, thru the Eksip discovery, for diabetics to cast aside all restricted diet programs, and starvation absurdities, eat those foods that are necessary for strength and normal functioning of the body, and become free from sugar."

Eksip comes in tablet form—200 to a bottle. One bottle, for which $6 is charged, comprises a "full treatment." With the treatment come directions, and again the diabetic finds that the advertising claim that the diabetic can "cast aside all restricted diet programs," is hedged about with qualifications. In the "Directions" he is warned not to "overload the system with bread, potatoes, and other high carbohydrates," and he is told that the best thing to do is to "leave them alone until your diabetic condition has disappeared." Furthermore, the diabetic is warned, *after* he has purchased the nostrum, that he should not abandon the diet to which he has been used: "The best course to follow is to wait two or three weeks before changing your diet, so as to give the tablets a chance to take effect."

Of course, no information is given regarding the composition of Eksip; the question of composition is lightly dis-

missed with the general statement that Eksip is a "palatable compound prepared from freshly gathered herbs and plants," and that it is "based on Dr. Stein-Callenfels secret formula." There is the usual farrago of testimonials common to the mail-order quack, purporting to be from patients who are alleged to have been cured. Richartz' booklet contains what purport to be two testimonials of physicians—one from Dr. Edmund Kolb, New York City, and the other credited to Dr. A. Francis Briggs, Long Island City, New York. Dr. Kolb was born in 1855 and died in March, 1925. He was not a member of his local society. Dr. Briggs was licensed in New York in 1907 as a graduate of the Long Island College Hospital for 1904. He is not a member of his local society.

Four years ago the A. M. A. chemical laboratory made a preliminary examination of some specimens that were sent in and claimed to be Eksip. At that time the laboratory reported that the bulk of the tablets consisted of magnesium carbonate and starch, with a small quantity of an unidentified drug. Recently, because of the number of inquiries which THE JOURNAL has received relative to this nostrum, it was decided to subject the stuff to a more complete analysis, and an original bottle of "Eksip" was purchased and submitted to the A. M. A. chemical laboratory for examination. The laboratory reported as follows:

LABORATORY REPORT

"One original bottle of Eksip (Matthew Richartz, New York, N. Y.) was submitted to the A. M. A. chemical laboratory for examination. The bottle contained 200 tablets of a gray color, odorless and almost tasteless; the average weight of each tablet was 0.23 Gm. (approximately 3.6 grains). The only clew to composition given in an accompanying pamphlet was: '. . . "Eksip"—(which is a combination of simple and harmless herb and root extracts) . . .' Qualitative tests indicated the presence of magnesium, a trace of calcium, carbonate, extractive material of vegetable origin, and an acid insoluble substance resembling talc. Magnesium was present as the basic carbonate. Under the microscope, the starch grains appeared to be those of Bermuda arrowroot. Alkaloids, heavy metals, organic acids, or emodin bearing drugs were not found.

"Quantitative determinations yielded the following:

"Magnesium carbonate (calculated from magnesium oxide)	84.8 per cent
"Starch	6.9 per cent
"Acid insoluble material	6.2 per cent
"Undetermined (by difference)	2.1 per cent
	"100.0

"From the foregoing it may be concluded that 'Eksip' contains essentially magnesium carbonate and starch."

It is to be hoped that the overworked fraud-order branch of the Post Office department will before long get around to this dangerous piece of quackery.

Correspondence

TETANUS

To the Editor:—In an article in the May issue of the *Archives of Surgery,* I have called attention to the great value of treating tetanus by large doses of serum intravenously. It is recommended that intraspinal injections be given up entirely, as they would seem to increase the mortality rate.

If the tables published mean what they seem to mean, this is a very important matter in the treatment of this disease. It is, however, desirable that a large number of additional statistics should be collected. I would therefore much appreciate it if any physician who employs this method of large doses by vein to the exclusion of spinal treatment would report the facts at once so that another statistical study can be published later.

J. M. WAINWRIGHT, M.D.,
912 Clay Avenue, Scranton, Pa.

"CONTROLLING THE ODOR AND TASTE OF ARSPHENAMINE"

To the Editor:—In THE JOURNAL, March 20, Stokes called attention to his observation that the disagreeable odor and taste of the arsphenamines, when given intravenously, may be overcome by the use of a wafer containing wintergreen or clove. I imagine that Dr. Stokes' patient used a "life saver" such as are sold at the corner drugstores. This expedient was apparently helpful.

In THE JOURNAL, May 1, Broeman calls attention to the fact that good results were obtained by having his patients smell a cotton plug moistened with bay rum. Both of these are inexpensive, easily carried out and apparently effectual.

No doubt there are other methods, the descriptions of which might tax the allotted space in THE JOURNAL. Will you please allow me to inform the readers of this column that an efficient and economical way of controlling such disagreeable effects of the arsphenamines is to have the patient hold the nose and breathe through the mouth, from the time immediately preceding the injection until after the injection is finished. With the nostrils closed, air will not play over the nasal mucous membrane and disagreeable effects are avoided. While Dr. Broeman has used his method for ten years, I can say that this method has been useful for similar purposes from time immemorial.

JOSEPH H. BARACH, M.D., Pittsburgh.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

REMOVAL OF MERCUROCHROME STAINS

To the Editor:—Is there any preparation that will remove the stains of merchurochrome-220 soluble from the hands and linen?

W. E. K., M.D., Sunbury, Pa.

ANSWER.—The full directions for the removal of mercurochrome as well as acriflavine stains was discussed in these columns, Dec. 6, 1924, page 1866. Because of the large number of inquiries received, the directions are again given.

According to New and Nonofficial Remedies, 1924, "the aqueous solution [of mercurochrome] stains the skin red, but the discoloration may be removed by washing in a solution of sodium hypochlorite (solution of chlorinated soda)."

The A. M. A. Chemical Laboratory reports that mercurochrome, acriflavine and other like stains can often be removed according to the following general procedure: The stained cloth is immersed in as small an amount as possible of a solution containing about 1 per cent of hydrochloric acid (1 part of diluted hydrochloric acid U. S. P. and 9 parts of water) and 2 per cent of potassium permanganate. The cloth should remain in this solution not longer than one minute; it is then transferred without rinsing to a solution containing not more than 1 per cent of hydrochloric acid, to which from 5 to 15 per cent (by volume) of solution of hydrogen peroxide, U. S. P., has been added. As soon as the potassium permanganate has been reduced by the hydrogen peroxide, the cloth is *well* rinsed in water. If the stain has not been entirely removed, the procedure is repeated, the cloth being permitted to remain in the acid potassium permanganate solution for a somewhat longer period.

Before trying the method on cloth, however, it is advisable, if possible, to subject a remnant of the unstained material to the same procedure in order to determine (1) whether or not the cloth will withstand the treatment, and (2) in the case of dyed goods, whether or not the original color is removed. In the case of fresh stains of mercurochrome, or acriflavine on dyed cloth, the former, not being fixed, can often be removed without affecting the original color of the cloth.

Stains on the hands can readily be removed by the use of the solutions just described.

PROTECTING THE HANDS AGAINST GASOLINE AND NAPHTHA

To the Editor:—Will you please give me the information concerning the possibility of protecting the hands against gasoline or naphtha gas? Workers in dry cleaning establishments find it necessary to put their hands in gasoline many times during the day, and recently there have come under my observation several cases of dermatitis from the gasoline or cleaning fluid, with secondary infections developing in the skin. Rubber or leather gloves are not practical.

WILLARD D. WHITE, M.D., Minneapolis.

ANSWER.—Protection for the hands against the action of naphtha and gasoline is secured with greater difficulty in the dry cleaning industry than in such others as painting. This is due to the fact that it is not practical to use oily applications for the hands, for fear that the garments being cleaned may come in contact with these oily substances.

A prime factor in the production of this dermatitis, and in paving the way for secondary bacterial or fungus infection, is the de-oiling of the skin by the naphtha, gasoline or benzene. On this account the application of some bland oily material, such as hydrous wool fat or oil of theobroma, is called for. Protection for most workers may be brought about by the following steps: thorough cleansing of the hands and arms at the end of the work period with a soap that lathers freely. Immediately afterward the hydrous wool fat or oil of theobroma should be rubbed into the skin of the hands and forearms thoroughly. The application of oily material should be repeated in the morning, and once or twice during the day if the circumstances of work warrant. Some workers become so susceptible as to require a change of occupation. At the first indication of the dermatitis, the worker should be taken away from exposure to the irritants and should be treated with a weak solution of aluminum acetate. If the condition is severe, the use of aluminum acetate for three or four days should be followed with applications of zinc oxid, 10 per cent, in olive oil.

There are also on the market certain proprietary preparations for protecting the hands against gasoline and oil, particularly in garages. These appear to consist of a substance resembling a soap such as is present in chloramine surgical cream or paste. Just how efficient these preparations are in industrial use, we do not know.

GLUCOSE BRAIN BROTH

To the Editor:—Kindly send me the formula for glucose brain broth-Rosenow.

CHARLES HEWSON CANNING, M.D., Atlantic City, N. J.

ANSWER.—The question was referred directly to Dr. Rosenow who replies:

Two mediums, dextrose brain broth and soft dextrose brain agar, have been found especially useful. They are prepared from meat infusion or beef extract in the usual way, and titrated so that the final product is from 0.5 to 0.7 acid to phenolphthalein. In order not to interfere with the growth of sensitive bacteria and yet to indicate their number, the agar medium is made to contain only 0.5 per cent of agar, just sufficient to jell, instead of the usual 1.5 or 2 per cent. Both of these mediums are placed in test tubes so that the column of medium is at least 8 cm. tall. Pieces of fresh brain substance, equivalent to about 1 Gm., are added to the bottom of each tube to make the column approximately 10 cm. tall. The mediums are then sterilized in an autoclave at 15 pounds pressure for fifteen minutes, or in an Arnold sterilizer on three successive days. Dextrose, from a concentrated sterilized solution, is added to both mediums after sterilization to make them 0.2 per cent dextrose; also decolorized acid fuchsin. The addition of ascites fluid, blood or serum, just before use, while advantageous in special instances, is found unnecessary for routine work. The brain substance renders the bottom of the tube anaerobic; the top necessarily is aerobic, and it follows that every gradation of oxygen pressure occurs between these two points.

NARCOTIC TAX STAMP MUST BE POSTED

To the Editor:—Is it necessary that a physician post in a conspicuous place in his office the special tax stamp issued him by the Collector of Internal Revenue as evidence of his registration under the Harrison Narcotic Act?

———, M.D.

ANSWER.—The conspicuous posting of such stamps is required by section 3239 of the Revised Statutes which section is made applicable to the Harrison Narcotic Act by section 7 of that act.

PLUS FOUR DIACETIC ACID

To the Editor:—In THE JOURNAL, January 9, page 104, Bowcock and Wood refer to "a plus four reaction for diacetic acid." I would greatly appreciate it if you could kindly inform me how the diacetic acid test is graduated, as we would much like to introduce it into this college.

A. STOTT, King George's Medical College, Lucknow, India.
Major, I. M. S.

ANSWER.—The inquiry was referred to Dr. H. M. Bowcock, who replied: "I would state that the method which I use in testing the urine for diacetic acid is the usual qualitative test. I use a 10 per cent water solution of ferric chloride and perform the Gerhardt test as described in the Treatment of Diabetes Mellitus, by Joslin, third edition, page 359. The reading of the test is influenced by the personal equation. I usually consider a test as four plus when the color is so deep that it will not transmit light."

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 13-16. Sec., Dr. S. W. Welch, Montgomery.
AMERICAN BOARD OF OTOLARYNGOLOGY, CANADA: Montreal, June 1. Sec., Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Mo.
ARIZONA: Phoenix, July 6. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.
CALIFORNIA: San Francisco, July 12-15. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.
COLORADO: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
CONNECTICUT: Hartford, Reg. Bd., July 13-14. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Bd., New Haven, July 13. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.
DELAWARE: Wilmington, Regular Board and Homeo. Board, June 15-17. Pres., Dr. H. W. Briggs, Wilmington.
FLORIDA: St. Petersburg, June 14-15. Sec., Dr. H. M. Rowlett, Box 603, Tampa.
GEORGIA: Atlanta, June 9-11; Augusta, June 1-3. Sec., Dr. C. T. Nolan, Marietta, Ga.
INDIANA: Indianapolis, July 13-15. Sec., Dr. Wm. T. Gott, 421 State House, Indianapolis.
IOWA: Iowa City, June 8-10. Commissioner of Health, Dr. Don M. Griswold, State Capitol, Des Moines.
KANSAS: Kansas City, June 15. Sec., Dr. Albert S. Ross, Sabetha.
KENTUCKY: Louisville, June 24-26. Sec., Dr. A. T. McCormack, 532 West Main Street, Louisville.
MAINE: Augusta, July 6-7. Sec., Dr. Adam P. Leighton, 192 State St., Portland.
MARYLAND: Baltimore, Reg. Bd., June 15-18. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore. Homeo. Bd., June 15-16. Sec., Dr. Joseph S. Garrison, Old Orchard Rd., Ten Hills, Baltimore.
MASSACHUSETTS: Boston, July 13-15. Sec., Dr. Frank M. Vaughan, Room 144, State House, Boston.
MICHIGAN: Ann Arbor, June 8-10. Detroit, June 14-16. Sec., Dr. Guy L. Connor, 707 Stroh Bldg., Detroit.
MINNESOTA: Minneapolis, June 15. Sec., Dr. A. E. Comstock, 734 Lowry Bldg., St. Paul.
MISSOURI: St. Louis, June 28-July 1. Chief, Licensure, Dr. Ross Hopkins, Jefferson City.
NATIONAL BOARD OF MEDICAL EXAMINERS: Part I, June 21-23; Part II, June 22-23. All applications should be made on or before May 15. Sec., Dr. J. S. Rodman, 1600 Walnut Street, Philadelphia.
NEBRASKA: Omaha, June 8-10. Director, Bur. of Exam. Bds., Mrs. Clark Perkins, Lincoln.
NEW JERSEY: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, Room 1101, Trenton Trust Bldg., Trenton.
NEW YORK: Albany, Buffalo, New York and Syracuse, June 28-July 1. Chief, Mr. Herbert J. Hamilton, Education Bldg., Albany.
NORTH CAROLINA: Raleigh, June 21-25. Sec., Dr. K. P. B. Bonner, Morehead City.
NORTH DAKOTA: Grand Forks, July 6. Sec., Dr. G. M. Williamson, Grand Forks.
OHIO: Columbus, June 8-11. Sec., Dr. H. M. Platter, Columbus.
OKLAHOMA: Oklahoma City, June 15-16. Sec., Dr. J. M. Byrum, Shawnee.
OREGON: Portland, July 6-8. Sec., Dr. U. C. Coe, 1208 Stevens Bldg., Portland.
RHODE ISLAND: Providence, July 1-2. Sec., Dr. B. U. Richards, 315 State House, Providence.
SOUTH CAROLINA: Columbia, June 22. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.
TEXAS: Austin, June 15-17. Sec., Dr. T. J. Crowe, 918 Mercantile Bank Bldg., Dallas.
UTAH: Salt Lake City, July 6. Dir., Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.
VERMONT: Burlington, June 23. Sec., Dr. W. Scott Nay, Underhill.
VIRGINIA: Richmond, June 16-19. Sec., Dr. J. M. Preston, 720 Shenandoah Life Bldg., Roanoke.
WEST VIRGINIA: Martinsburg, July 6. Sec., Dr. W. T. Henshaw, Charleston.
WISCONSIN: Milwaukee, Basic Science Board, June 12-13. Sec., Dr. M. F. Guyer, Madison. Regular Board, June 29-July 1. Sec., Dr. Robert E. Flynn, State Bank Bldg., La Crosse.

Medical Economics and Miscellany

IS UNIVERSAL LIFE INSURANCE COMING?

WILLIAM EVERETT MUSGRAVE, M.D.
SAN FRANCISCO

Some 55 million individuals, or approximately one-half the people of the United States, are protected by life insurance recorded in 100 million policies of an average value of $1,333, carried (90 per cent +) by about 170 companies: there are more than three times as many insurance policies in force as there are automobiles in use. Approximately 75 billion dollars of life insurance is in force, and it is being increased at the rate of some 15 billion dollars a year. The annual income of this incomprehensible business closely approximates that of the national government, being 3 billion and some odd million dollars for each. However, in disbursements, the government wins by spending more than 3 billion, or nearly all its income, while the life insurance companies expended last year (to policyholders) about half their income.

Not only is this healthy giant of life insurance growing like the proverbial beanstalk, but it is spreading its branches like the green bay tree. It is becoming what the name life and health insurance implies, and less the death insurance of earlier days. It is branching out into the field of health and medical service to such an extent that if it is wisely guided it is likely, at no far distant date, to do medically for our citizens, by private and mutually beneficial enterprise—and do well—what Germany, England and certain other countries are unsuccessfully trying to do by government in monopolizing and socializing the practice of medicine. Our government has largely undertaken similar control of education, but so far has only fastened its tentacles into certain phases of health.

There is one phase of the commendable growth of life and health insurance, as private business, that concerns all people and ought to be better understood than it is. It consists essentially in a weakening of the health requirements for policy purchasers and extension of the medical care of policyholders, apparently under the philosophy that the lowered health standards for purchasers will materially increase the volume of business, and that this, together with more extensive medical supervision of defective policyholders' health, will take care of the extra hazards inherent in this new development of business. It may be that this is a fact. In any event, we may rest assured that the financiers who determine the policies of insurance carriers are not wholly altruistic in their actions and that they are doing as little guessing as possible in taking this definite step. To be sure, not all companies admit that the doing away with medical examinations of applicants for insurance will result in increasing life hazards among their assured, and none of them call particular attention to it as a probability.

One speaker at the annual meeting of the Association of Life Insurance Presidents (Dec. 3, 1925) made the argument and quoted statistics which he interpreted to show that losses are greater among risks based on medical examination than among those selected without such examination. Other speakers at this conference considered that the probable increased losses among nonmedically examined risks would be more than offset by the saving of the $15,000,000 paid to physicians annually. Only one or two of the speakers at this great association of insurance policy makers called particular attention to the savings, as well as the increased benefits to policyholders, clearly indicated by their extending health supervision and the practice of medicine among their assured, now gaining such headway among the companies.

The selling of insurance without medical selection of risks and without health supervision of the insured is as old as life and health insurance. The business started that way in England some 200 odd years ago. Later, medical examination of risks was made a requisite for policy purchasers, and for many years was almost universally followed. There a certain amount of medical supervision of the insured was introduced, at first frankly as a protection to the financial investment: about as altruistic as the old encouragement of prolific human breeding because profligate rulers needed more "war fodder." With the expansion of medical care, and consequent prolonging of the lives of policyholders, some companies began to lower their standards of medical scrutiny of insurance purchasers. The last few years has seen such an astonishing decrease in the medical requirements for applicants for insurance and such a tremendous increase in the volume and variety of medical care supplied to those insured that, in effect, it makes of life insurance a new type of business with vast potentialities for good and evil.

If vital and actuarial statistics that have been accumulating over the years are even approximately correct, there ought to be available sufficient data about all life hazards on which to base a safe premium rate for the insurance of persons of all ages and most conditions of health; this assuming, of course, adequate volume of business and sufficient fluid reserves to meet possible extraordinary situations produced by epidemics and catastrophes. Obviously, the premiums on policies covering miscellaneous risks must be higher than is necessary for risks selected by thorough medical examination, and carriers dealing in the more hazardous form of business would call for scrupulous financial safeguards.

That some leaders in the insurance field recognize and appreciate the vast difference between life and health risks selected in a distant central office, from medical data secured by nonmedical people, plus the examination of a specimen of urine, also sent by mail, and risks that are based on the additional findings of a competent physician, is apparent in their public statements. The arguments and "not conclusive" statistics quoted by some insurance authorities to support their conclusions, that medical examinations have little or no value in the selection of risks, loses weight by the fact that they, as well as other companies, strengthen and enlarge their medical service to their assured as they lower their standards of acceptance. Medical service is, of course, precisely as valuable, or valueless, in the one instance as in the other.

However, that more and more of the reliable insurance companies are rapidly expanding and promoting insurance, without the customary careful selection of risks based on medical examination, indicates that they have sufficient facts to warrant promotion and extension of a practice headed toward universal or unrestricted life insurance. Considered solely in the interests of public health and welfare—which is the only way physicians or any one else should consider it—there is much to commend this venture. It is a logical and important step toward that even more desirable goal when accident and health insurance carriers will also liberalize their policies until they too will write policies with so few limitations, exemptions and restrictions that most people can secure—voluntarily—coverage that ameliorates the dangerous and worrisome hazards of health and distributes the costs and personal losses incident to accidents and infirmities. In the meantime it is to be hoped that leaders in the gigantic business of life insurance will so develop their plans that more and more citizens may purchase, at costs as reasonable as consistent with the hazards of the business, that comfort which all people have come to recognize as a normal blessing of life insurance.

HEALTH SERVICE FOR POLICYHOLDERS

Supervision of the health of policyholders, which is being expanded to offset the increased hazards inherent in lowering the standards for acceptable risks, is a movement of tran-

scendent importance to all people and particularly to physicians and other health-conserving agencies. Several life insurance companies and many accident and health insurers have been feeling their way for a long time toward the goal at which their financial interests would be better protected, the comfort and lives of their insured extended, and society served by the development of their own medical departments to serve the health of their policyholders. President Haley Fiske of the Metropolitan asked the Association of Life Insurance Presidents recently, "Is there any ill or contingency in life our business will not cover?" In answering the question, he said, "The specters before wage and salaried men and women are death, sickness and accident, unemployment and dependent old age. It is the true function of life insurance to banish these specters." The Metropolitan's plans for banishing these specters is summed up in this quotation from his address:

"The extraordinary number of policyholders, probably not far from half the population, and in Eastern cities a much larger proportion, put upon the company and its officers a responsibility as to public health and welfare. We see the companies attacking disease, offering diagnosis and advice to individuals, supplying them with health literature, cooperating with government and health and school officials, reaching out to give education to the people and even to the children, in preventive medicine. The companies' official staff must now comprise not only insurance men but financial experts, social students, physicians, specialists in health, in welfare, in education, in publicity. It is not for advertising that one company nurses free of change its sick poor by two and a half million yearly visits, distributes literature on prevention and cure of sickness from practically every known disease to the extent of forty millions of pamphlets a year, broadcasts health talks, teaches physical culture by radio; publishes, in seventeen millions of copies of periodicals, its monthly talks on health, with no reference to insurance. It is the fulfilment of responsibility to one sixth of the population covered by its policies. It is concern for public health."

As yet there is no uniformity in the quality, quantity and character of the services supplied by the various companies "free" to the assured but, of course, paid for in premiums. While some carriers are rendering this service themselves, more of them are "farming" it out and presumably thereby not only covering the ostrich's head but making the bird entirely invisible; and some have not yet undertaken this form of medical practice. There are appealing talking points in favor of these great corporations' adding the practice of medicine—usually disguised in name at least—to their other business ventures; but it remains to be demonstrated that they realize the intelligence or the size of the bear whose tail they are grasping. However, it is easier to respect the company that tackles its own bear than it is those who exercise the caution of employing self-styled middlemen to handle their hot chestnuts.

Any practical movement that will insure better health by improved medical care and thus prolong life and promote happiness, regardless of its possible effects on physicians and other existing health agencies, ought to be encouraged. But before steps are taken calculated to change radically the ages-old custom which recognizes health as a personal matter, served by personally selected advisers, to a more public matter to be attended to by the agents of some corporation, all the logical consequences ought to be reviewed.

STATE MEDICINE MOVEMENTS

The road of social progress is strewn with the wrecks of schemes having for their ostensible purpose the commendable one of promoting health and longevity by the introduction of some wholesale organized system of medical care. One of the largest and oldest of these movements has for its purpose the control of health by the state, to be supported by taxes and served by government employees "free" alike to all citizens. In several countries this scheme has developed into a government monopoly, compulsory for the majority of the citizens. These "compulsory health insurance" or "state medicine" movements, as they are called, vary considerably in methods, but in all the objective is the laudable one of promoting health, treating the sick and prolonging life. They all propose to do this by substituting, for the traditional personal health care by health advisers selected by the patient, wholesale practice carried on by government departments.

Throughout the fifty or more years these experts have been active, they have been under such constant attack by the sick as well as those who serve the sick that, even with all the power of the government, vast numbers of people have continued to appeal to private health agencies for personal service, leaving to the government largely only clients who for one reason or another could not help themselves, and leaving for the government service largely such physicians and other health agencies as prefer a poorly paid government job to the uncertainties of personal practice.

Direct and open efforts to governmentalize health and medical service have always been defeated in the United States, but the leaders of this brand of socialism and commercialism have succeeded in projecting their tentacles far into the social structure in a score or more directions by governmentalizing health service for this and that group of citizens. The most promising antidote in sight to the progressing movement calculated to governmentalize, socialize, sovietize health is the rising tide of associations, societies, groups and corporations that propose to distribute the costs and character of health service on some basis of voluntary agreement between the beneficiary, the health-serving agency and the responsible organization. There are history-making possibilities inherent in this situation, but that they are being intelligently grasped remains to be seen. The idea needs leadership of a kind that will protect the interests of the beneficiary, the health agencies who serve and the investors, and which will do these things in a manner calculated to create and sustain public approval. The great insurance companies are in a position to do this more than ever now that the life companies are enlarging their field to include much of what was formerly considered to be health and accident insurance and personal health service by personally selected physicians. It is quite true that the life companies do not emphasize the fact that they are also health insurers; but when they lower their standards of admission and plan to take care of the consequently increased hazards by an extended and improved medical service to their policyholders, they thereby enter the broader and, to society, the far more useful service of health insurance. Although insurance companies could be charged with conducting this improved medical service for the purpose of prolonging the date when death payments may be due, nevertheless, theoretically at least, it pays the policyholder dividends in better health and longevity, more comforting to him and society than are death benefits.

The future consequences of this expanded and expanding type of life, health and accident insurance on existing agencies of health is problematic; but if the future practice of medicine and health service is to be by employees of insurance corporations, as the only alternative to bureaucratic government service, the interests of society, as well as those who serve, lies with private business. If, as claimed by its leaders, a "true function of life insurance is to banish the specters of sickness and accident," we are destined to see a battle royal between government, managed by politics, and the largest of all private businesses, managed by wealth, over the most precious of human assets. In the meantime, those who serve and those served may only look on, and some of them—pray.

805 Balboa Building.

REPORT ON NATIONAL HEALTH INSURANCE

Important recommendations involving substantial changes in scope and administration are contained in the report of a royal commission appointed in England in 1924 to inquire into the scheme of national health insurance established by the acts of 1911-1912, and to report what, if any, alterations, extensions or developments should be made in regard to the scope of that scheme and the administrative, financial and medical arrangements set up under it. The scheme came into operation in July, 1912, and a series of amending acts followed, from 1913 to the consolidating act of 1924. The original act had a complexity which in practice yielded no adequate compensating advantage, and this led to amendments aiming at simplification and modification of administration. A second main cause leading to amendment was the war and its economic consequences, but it is a striking tribute to the lines on which the original act was constructed that its administration was able to bear the strain imposed by war conditions so early in its history. The present inquiry is the first general and comprehensive investigation of a scheme under which more than 15,000,000 persons are insured. The commission received little evidence directed against the scheme as a whole, although public invitation was given to any bodies or persons who desired to make representations. There does not now appear to be any considerable body of opinion adverse to the principle of national health insurance. Indeed, a large volume of evidence in its favor was received from many different quarters, testifying to the advantages in health and social security derived under it. The report presents no fewer than 122 recommendations. The first states that national health insurance has established itself as a permanent feature of the social system in this country, and should be continued on its present compulsory and contributory basis, subject to the changes proposed in the report. It is suggested that to the persons at present required to be insured as employed contributors there should be added "persons engaged in employment under a contract for the performance of manual labor for the purpose of any trade or business except so far as such employment may be excluded by a special order." It is also suggested that the revenue of the scheme should continue to be derived from insured persons, employers, with a payment from the national exchequer of a proportionate part of the cost of the benefits and of their administration; and that the cost of the central administration of the scheme should continue to be a charge on the exchequer.

MEDICAL BENEFIT

Medical benefit is declared to have been a valued and successful element in the scheme. Heretofore medical benefit was confined to a general practitioner service; but this limitation detracted from the value of the benefit, and its removal is declared to be urgently desirable. In view of the financial burden of the various social services at present, it is proposed that no extensions of benefit involving substantial additional expenditure should be contemplated now or in the immediate future, but that any immediate changes in the scheme should be limited to those possible within its present financial resources. An analysis of the expenditure of approved societies on sickness and disablement benefits reveals the need for more effective supervision of claims for those benefits.

PROPOSED BENEFIT EXTENSIONS

The extensions of benefits to be made are placed in the following order of priority: (*a*) extension of the scope of medical benefit; (*b*) the provision of allowances in respect of dependents of insured persons in receipt of sickness or disablement benefit; (*c*) improved provision at the time of pregnancy and childbirth for insured women and the wives of insured men; (*d*) provision of dental treatment. The extension of the scope of medical benefit should take the form of the provision of: (*a*) expert medical advice and treatment for persons who can travel to meet the specialist; (*b*) expert advice for persons who are unable to travel; (*c*) laboratory services. Inpatient treatment in hospitals, major operations in the home, maternity services and dental service should not be included at present.

SPECIALIST TREATMENT

The extended service should be provided, not by way of development of the outpatient work of the hospitals, but through an independent scheme organized, under the general direction of the ministry, throughout the whole country by the insurance committees. Provision should be made for the closest cooperation between the general practitioners and the specialists. Any practitioner possessing the requisite qualifications should be entitled to take part in the work, and the decision as to whether particular practitioners possess these qualifications should lie in the hands of a mixed lay and medical committee for each area. In the initial stages of the scheme, arrangements might be made for patients who are able to travel to attend at the specialist's office, at the outpatient departments of hospitals, or at clinics established by the local administrative authority, as may be found most convenient.

SOME OBJECTIONS

Two of the members of the commission, while concurring in the terms of the majority report, consider that there are two further matters which ought not to be ignored, particularly if due weight is to be given to the reactions of our social legislation on the trade and industry of the country. They postulate, as an elementary principle, that in promoting schemes of social legislation the state should avoid incurring any expenditure not essential to the end in view, and that the funds required should be so collected as to involve a minimum disturbance to industrial enterprise. The lack of coordination in our social services is the first point to which they draw attention, and they point out the inconvenience and, by implication, the waste which it occasions. While they do not dissent from the present arrangements, under which the employer's contribution is on a flat rate proportioned to the number of employees, they doubt whether the reactions of the cost of health insurance on the trade and industry of the country are fully appreciated. At present the contribution made by employers to the health insurance fund is roughly proportioned to the wages bill, but the wages bill has no necessary relation to the profits of a firm. In consequence, a firm employing a large staff will contribute largely to the health insurance fund, even though it be in a depressed trade and may not at the time be covering even overhead expenses; on the other hand, provided it employs few men, a prosperous firm will contribute but little. It follows that the ultimate incidence of the tax and its reaction on trade may vary greatly from one industry to another. In certain cases it may doubtless be possible in large measure to pass the burden on to the consumer; elsewhere this may be wholly impossible. The burden imposed by social insurance on industry is in certain cases very real, and, unfortunately, it is at present most onerous where there is least capacity to bear it, in those industries, as it happens, which are most essential to the country's prosperity. In the case of the "sheltered occupations" (those which are not exposed to competition) little inconvenience may arise; the burden may be borne or passed on. But in the case of the unsheltered industries, in which the full rigor of foreign competition has already produced a position of grave embarrassment reflected in the unemployment returns, it is not permissible to regard the burden of social insurance as negligible and free from possible detrimental reactions on the prosperity of the country and, indeed, on the employment of the worker.

Book Notices

COMPARATIVE PHYSIOLOGY. By Lancelot T. Hogben, M.A., D.Sc., Assistant Professor in Zoology, McGill University. Cloth. Price, $3. Pp. 219, with 44 illustrations. New York: The Macmillan Company, 1926.

This is a well written, critical and interesting volume on comparative physiology, with chapters on muscular contraction, ciliary activity, secretion, respiration, nutrition, circulation, endocrine coordination, nervous coordination, animal behavior, fertilization, inheritance and development, particularly as illustrated in the lower animals. The book is addressed to two classes of students—advanced students of zoology who need information and orientation on the functional side of biology, and advanced medical students who may be or should be interested in the general manifestations of life and disease as it appears in the entire animal kingdom. The author notes, quite correctly, that there exists today no up-to-date book on comparative physiology in the English language. The present volume aims to supply this need. The modesty of the claims of the author for erudition and judgment in the presentation is as noteworthy as is the excellence of the book. The volume can be recommended for interesting study and information to any physician who still retains or who may long to reestablish his contact and information in general animal life. Even recent graduates in medicine can read the volume with profit, because even in the best medical schools most of the data in general physiology are left out of the courses in physiology because of lack of time.

DIE GESCHLECHTSKRANKHEITEN. Leitfaden für Studierende und Aerzte. Von H. Löhe, A. o. Prof. A.D. Univ. Berlin. Paper. Price, 8.40 marks. Pp. 213, with 75 illustrations. Berlin: S. Karger, 1926.

This is a collection of the postgraduate lectures that the author used to give at the Berlin dermatologic clinic. They cover the clinical pathology, diagnosis and treatment of gonorrhea and syphilis. While written along the customary lines, they excel in precise and clear presentation and in the inductive method applied to the discussion of the therapeutic measures. The illustrations are instructive. A special chapter is devoted to venereal prophylaxis. There is a tabulation of prescriptions that should prove useful.

STATISTICAL ANALYSIS. By Edmund E. Day, Professor of Economics, School of Business Administration, University of Michigan. Cloth. Price, $4. Pp. 459, with illustrations. New York: The Macmillan Company, 1925.

This is primarily designed as a general introduction to statistical methods. It is clearly written and well provided with illustrations. The examples and illustrations are based chiefly on economic data, so that the book is not especially adapted for physicians or other students of vital statistics. The author's handling is conservative and never extreme. He sees clearly that the statistical method can never take the place of experiment where experiment is possible. Applied to data such as are found in many biologic problems where many separate and distinct factors are concerned and where experiment is not feasible, the statistical method may be valuable. The temper of the discussion may be gathered from the following statement, which might profitably be kept in mind by all who attempt to use the statistical method of analysis: "Statistical results may create presumptions in favor of certain conclusions. They rarely dispose of matters completely."

RESPIRATORY FUNCTION IN DISEASE. By Jonathan C. Meakins, M.D., C.M., F.R.C.P., Professor of Medicine, McGill University, and H. Whitridge Davies, M.B., B.S., Lecturer in Methods of Clinical Investigation in the Department of Therapeutics, University of Edinburgh. Cloth. Price, 28 shillings net. Pp. 478, with 63 illustrations. London: Oliver and Boyd, 1925.

This book, intended mainly for those engaged in the practice and teaching of medicine, presents the subject of disturbed respiratory function from the standpoint of clinical medicine. In it are collected the results of important investigative work scattered throughout the enormous literature that has appeared on this subject during the last few years. The authors attempt to give to physicians a working knowledge of the chemical and physiologic facts concerning respiration. Part I is concerned with normal respiratory function. The theories and known facts of hemorespiratory exchange are considered. Part II deals with respiratory function under abnormal conditions. Chapters are devoted to vital capacity and lung volume; respiratory exchange and the basal metabolic rate; therapeutics of respiratory disturbances; and methods of investigation. An extensive bibliography is appended. The work serves its purpose in presenting in simple terms the fundamental facts of a technical subject.

A TEXT-BOOK OF PSYCHOLOGY FOR NURSES. By Maude B. Muse, R.N., A.M., Instructor of Nursing Education at Teachers College, Columbia University. Cloth. Price, $2.50 net. Pp. 351, with illustrations. Philadelphia: W. B. Saunders Company, 1925.

The need of some knowledge of the patient as a human being instead of as a mere collection of organs each of which is subject to disease is steadily becoming recognized as essential for all who would undertake the care and treatment of the sick. To no group is this of greater importance than to the nurse, not only as regards the care of her patients but also in relation to her own satisfactory adjustment to her work. In this volume is presented an outline of the modern conception of human behavior expressly designed by a nurse for the use of nurses. With this in view, the various topics are throughout illustrated by situations taken from the hospital and training school. It is written in simple language and is probably as brief as is consistent with a practical working knowledge. It can be safely recommended for use in training schools for nurses.

VISUAL FIELD STUDIES. By Ralph I. Lloyd, M.D., F.A.C.S., Surgeon, N. Y. Ophthalmic Hospital. Cloth. Price, $6 net. Pp. 216, with 124 illustrations. New York: Technical Press, 1926.

This is the outgrowth of a series of postgraduate lectures, elaborated into a permanent form. It starts with a brief, but interesting history of perimetry as developed during the latter half of the last century, and progresses into the modern concepts of both central and peripheral perimetry. The chapter devoted to retinal physiology is written in a refreshing manner in that the practical application of the dry-as-dust laws is stressed. It may be remembered that the author developed the present day stereocampimeter and consequently is a red-hot enthusiast for binocular fixation in perimetry as well as an ardent devotee of tangential perimetry. According to the trend of modern thought, he seems to be justified. The method of taking visual fields, central and peripheral, arciform and tangential, is given at length, and the ensuing results are analyzed clearly and forcefully. Fully fifty pages are devoted to the visual fields in retrobulbar disease, and the differences due to varied etiologic factors elaborated on. Extensive studies of the so-called amblyopia ex anopsia are included, and the author inclines toward the opinion that this condition results from retinal birth hemorrhages. The book is well worth while, not for students, but for ophthalmologists, beginners as well as others. A rather unique feature is a diagram on the front cover representing an early perimetric experimental apparatus used by Aubert and Foster in 1857.

METHODIK DER UNTERSUCHUNGEN VON NERVENELEMENTEN DES MAKRO- UND MAKRO-MIKROSKOPISCHEN GEBIETES. Teil I. Von Prof. Dr. W. Worobiew. Paper. Pp. 130, with 39 illustrations. Berlin: Oscar Rothacker.

Gross anatomic research as ordinarily carried out through dissection with the naked eye and natural light, has certain limitations. For instance, it is not possible, under such conditions, to follow up the course of afferent nerves in the heart muscles, the walls of the stomach, or the bladder. The study of finer ramifications of the nerve fibers, their connections with the ganglion cells and other structures is left to the histologist. The latter, however, is able to study only small areas and has to resort to reconstruction methods in order to bring out the topography of the finer nerve structures. Areas that are inaccessible to the gross anatomist and do not actually belong to the domain of the histologist are named by Worobiew macro-microscopic. In this book, which is merely an introduction, he describes the methods used in "macromicroscopic" studies by himself and his pupils. Dis-

secting is done with very fine instruments, under a binocular dissecting microscope, the parts being placed in suitable clearing mediums and stained in toto; that is, the entire object (uterus, heart, stomach) is stained and dissected. A number of beautiful photographs show the remarkable results obtained by the macromicroscopic methods described. They clearly show, for instance, the ganglionic plexuses in the walls of the heart and the bladder, the nerves of the tendons, and the ganglion cells in the stomach walls. In short, the topography of final nerve ramifications and their relationship to the ganglionic system is brought out with remarkable clearness. It is unquestionably a highly scientific and useful book, well written and excellently edited.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

CHEMISTRY IN AGRICULTURE: A Cooperative Work Intended to Give Examples of the Contribution Made to Agriculture by Chemistry. Edited by Joseph S. Chamberlain, Professor of Agricultural and Organic Chemistry, Massachusetts Agricultural College. Advisory Editor, C. A. Browne, Chief, Bureau of Chemistry, United States Department of Agriculture. Cloth. Price, $1. Pp. 384, with illustrations. New York: The Chemical Foundation, Inc., 1926.

Glorification of modern chemical advance by experts in various fields.

PUERPERAL SEPTICÆMIA: Its Causation, Symptoms, Prevention and Treatment. Being the Substance of a Thesis Submitted to the Royal Society of Medicine in June, 1924, and Awarded the Nicholls Prize. By George Geddes, M.D., C.M. Cloth. Price, $4. Pp. 200, with illustrations. New York: William Wood & Co., 1925.

Prize thesis reaching conclusion that only delivery by trained midwife in hospitals under medical supervision will lower still further deaths from puerperal sepsis.

STAUUNGSTYPEN BEI KREISLAUFSTÖRUNGEN. Mit besonderer Berücksichtigung der exsudativen Perikarditis. Eine anatomische, experimentelle und klinische Untersuchung. Von Herbert Elias, Assistent an der I. med. Klinik, und Adolf Feller, Assistent am path.-anat. Institute. Paper. Price, 24 marks. Pp. 232, with 93 illustrations. Berlin: Julius Springer, 1926.

Research on exudative pericarditis and heart disease in general.

NERVOUS AND MENTAL DISORDERS FROM BIRTH THROUGH ADOLESCENCE. By B. Sachs, M.D., Consulting Neurologist to the Mount Sinai and Montefiore Hospitals, and Louis Hausman, M.D., Instructor in Neuro-Anatomy, Cornell University Medical College. Cloth. Price, $10 net. Pp. 861, with 110 illustrations. New York: Paul B. Hoeber, Inc., 1926.

Consideration from neurologic point of view of nerve disturbances with highly conservative discussion of psychologic and psychiatric problems.

THE DIAGNOSIS, TREATMENT AND END RESULTS OF TUBERCULOUS DISEASE OF THE HIP JOINT. By George Perkins, M.Ch., F.R.C.S., Assistant Surgeon to the Royal National Orthopædic Hospital. Cloth. Price, $1.75. Pp. 118, with 32 illustrations. New York: Oxford University Press, 1926.

Monographic essay, emphasizing recumbency, traction and fixation, combined with open air, hygiene and heliotherapy for treatment.

ADVISING THE TUBERCULOUS ABOUT EMPLOYMENT. By W. I. Hamilton, Personnel Director, Boomer-Dupont Properties Corporation, New York, and T. B. Kidner, Institutional Consultant, Technical Adviser, Central New England Sanatorium Association Industrial Settlement. Cloth. Price, $2. Pp. 171. Baltimore: Williams & Wilkins Company, 1926.

Suggestions on the adjustment of the handicapped to their occupational environment.

THE PRIVATE PRACTITIONER AS PIONEER IN PREVENTIVE MEDICINE: Being the annual oration of the Hunterian Society, 1926. By Sir George Newman, K.C.B., M.D., D.C.L. Paper. Price, 30 cents. Pp. 47, with 1 illustration. New York: Oxford University Press, 1926.

Emphasizing life of John Hunter and showing how general practitioner has helped to build our knowledge of preventive medicine.

THE BACTERIOPHAGE AND ITS BEHAVIOR. By F. D'Herelle, M.D., Director of Laboratories at Alexandria, Egypt. Translated by George H. Smith, Ph.D., Associate Professor of Bacteriology and Immunology, School of Medicine, Yale University. Cloth. Price, $8. Pp. 629, with illustrations. Baltimore: Williams & Wilkins Company, 1926.

The last word, concluding with a chapter on phagotherapy for dysentery and staphylococcus infections in which the author deprecates premature commercial exploitation.

YOUNG'S PRACTICE OF UROLOGY. Based on a Study of 12,500 Cases. By Hugh H. Young and David M. Davis. With the Collaboration of Franklin P. Johnson. Volumes I and II. Cloth. Price, per set, $25 net. Pp. 1484, with 1003 illustrations. Philadelphia: W. B. Saunders Company, 1926.

A monumental text based on vast personal experience and research, beautifully illustrated.

AN INTRODUCTION TO THE STUDY OF X-RAYS AND RADIUM. By Hector A. Colwell, M.B., D.P.H., Director of the Radiological Department, King's College Hospital, and Cecil P. G. Wakeley, F.R.C.S., F.R.S., Assistant Surgeon, King's College Hospital. Cloth. Price, $3.35. Pp. 203, with 37 illustrations. New York: Oxford University Press, 1926.

Handbook of elementary instruction on nature and application of radioactive substances.

THE ENDOCRINE ORGANS: An Introduction to the Study of Internal Secretion. Part II. The Pituitary; The Pineal; The Alimentary Canal; The Pancreas, and the Sex Glands. By Sir E. Sharpey-Schafer, LL.D., D.Sc., M.D. Second edition. Cloth. Price, $7. Pp. 177-418, with 117 illustrations. New York: Longmans, Green & Co., 1926.

Important contribution summarizing latest investigations, with critical comment.

FIBRILACIÓN Y FLUTTER AURICULAR. Por el Dr. Manuel Vela González. Discurso de Recepción en la real Academia de Medicina de Sevilla. Discurso de Contestación del Dr. Vicente Hernández Irala, Académico Numerario. Paper. Pp. 65, with 33 illustrations. Seville, 1926.

Thesis on auricular fibrillation.

NEURITIS AND NEURALGIA. By Wilfred Harris, M.D., F.R.C.P., Senior Physician to St. Mary's Hospital, and to the Hospital for Epilepsy and Paralysis, Maida Vale. Cloth. Price, $4. Pp. 418, with 45 illustrations. New York: Oxford University Press, 1926.

Practical consideration of common complaints, with useful suggestions on treatment.

CÆSAREAN SECTION. With a Table of 120 Cases. By Herbert R. Spencer, M.D., B.S., F.R.C.P., Consulting Obstetric Physician to University College Hospital. Cloth. Price, $2.75. Pp. 71, with 5 illustrations. New York: William Wood & Co., 1925.

Consideration of 120 cases, with an excellent historical introduction.

MEDICAL USES OF RADIUM: Summary of Reports from Research Centres for 1924. Medical Research Council, Special Report Series, No. 102. Paper. Price, 1s. 6d. net. Pp. 43, with 3 illustrations. London: His Majesty's Stationery Office, 1926.

Summary of research by authoritative British research center.

MALIGNANT DISEASE OF THE TESTICLE: Its Pathology, Diagnosis, and Treatment. By Harold R. Dew, M.B., B.S., F.R.C.S., Honorary Surgeon to Out-Patients, Melbourne Hospital. Cloth. Price, $7 net. Pp. 168, with 52 illustrations. New York: Paul B. Hoeber, Inc., 1926.

Handsomely illustrated monograph based on a 1923 prize essay.

RUPTURA DE EMBARAZO TUBARIO. Por el Dr. Velarde Pérez Fontana, Médico Cirujano de la Asistencia Pública. Tesis presentada al concurso de agregacion de cirugia. Paper. Pp. 144, with 18 illustrations. Montevideo, 1925.

Thesis on rupture of the fallopian tubes.

MODERN METHODS OF AMPUTATION. By Thomas G. Orr, A.B., M.D., F.A.C.S., Professor of Surgery, University of Kansas. Cloth. Price, $3.50. Pp. 117, with 125 illustrations. St. Louis: C. V. Mosby Company, 1926.

Practical monograph, well illustrated.

HANDBOOK OF DISEASES OF THE RECTUM. By Louis J. Hirschman, M.D., F.A.C.S., Professor of Proctology, Detroit College of Medicine. Fourth edition. Cloth. Price, $6.50. Pp. 403, with 252 illustrations. St. Louis: C. V. Mosby Company, 1926.

Fourth edition of a standard work.

THE DEVELOPMENT, ORGANIZATION AND OPERATION OF THE BUREAU OF LABORATORIES OF THE MICHIGAN DEPARTMENT OF HEALTH. By C. C. Young, Dr.P.H., Director. A dissertation submitted in partial fulfilment of the requirements for the degree of Doctor of Public Health in the University of Michigan, January, 1924. Paper. Pp. 188, with illustrations. Lansing: Michigan Department of Health, 1925.

Medicolegal

Evidence of Injuries to Others—Use of Medical Works

(E. I. du Pont de Nemours & Co. v. White (U. S.), 8 Fed. R. (2d) 5)

The United States Circuit Court of Appeals, third circuit, holds that in this action, in which plaintiff White sued the defendant for alleged failure to take reasonable care to prevent the escape of noxious and poisonous gases in its factory where he worked, it was not error to admit the testimony of three other employees, who worked in the same rooms where he did, that the gases in those rooms produced practically the same effect on them as on him. In evidencing the quality of gas, such as phosgene and chlorine (to which the plaintiff alleged that he was subjected by the negligence of the defendant), by instances of its effects on others who worked in and inhaled it, the natural and logical limitation was that the evidential instances should have occurred under substantially the same circumstances; otherwise the ill effects might be attributed to the influence of some other element introduced by the differing circumstances. While in the use of this mode of proof unfair surprise and confusion of issues inevitably arise and often serve to exclude the evidence, yet the almost universal attitude of courts at the present time is to admit such evidence, subject to the limitation that the evidential instances took place under conditions substantially similar to the one in issue.

But it was error to permit the defendant's expert witness to be asked, in an effort to impeach him, whether or not he agreed with certain medical works on which he had not relied as authority for his testimony. The witness, a physician, who testified that he had seen many men who had been gassed with chlorine and phosgene, and that there was no case on record in which it had been established that the inhalation of gas produced fibrosis (which the plaintiff claimed to have as a result of such inhalation), was asked, while under cross-examination, if he differed with an author from whose book counsel read statements opposed to the views of the witness. Objection was made, but the witness was required to answer. The vice of the question was that it involved the admission of hearsay evidence, without giving the adverse party an opportunity to cross-examine the author. It is well settled in New Jersey that when a physician testifies from his own experience as an expert, he may not be impeached by medical works on which he has not relied as authority for his testimony. It is only when a witness refers to them for his own opinions that they are receivable in evidence, and then only for the purpose of contradicting him. The federal court here was administering New Jersey law, and in doing so it must be governed by the New Jersey rules of evidence, unless there was a federal rule to the contrary. But the federal rule and the New Jersey rule are the same on this subject. This testimony was therefore inadmissible and prejudicial.

Validity of Regulatory Statutes

(Butcher et al. v. Maybury, Director of Licenses (U. S.), Fed. R. (2d) 155)

The United States District Court, W. D. Washington, S. D., in denying an application for an injunction, says that the plaintiffs were drugless healers and this suit was brought to restrain the enforcement of chapter 10 of the session laws of Washington for 1925, which statute provides for the revocation under certain circumstances of licenses issued to drugless healers.

The right of a physician to practice his profession is a property right, of which he cannot be arbitrarily deprived. The right is a qualified one, and is held in subordination to the duty of the state under the police power to protect the public health. The police power cannot be stipulated or bartered away. The authorities hold without dissent that it is competent for the legislature to prescribe qualifications for those who are to practice medicine and thus to assure that they shall possess the requisite character and learning. The regulation of drugless healers is a proper exercise of the police power. The regulatory power of the state may be properly committed to an administrative board or officer. These regulatory statutes may be made operative on those engaged in practice prior to the enactment of the statutes. The state may change the qualifications from time to time, making them more rigid. The legislature may prescribe qualifications, as to both character and learning, which will require those in practice to give up their occupation. Legislation prescribing qualifications which a practitioner cannot meet because of conditions antedating the enactment of the legislation is valid. Such legislation does not constitute punishment; it is legitimate regulation. The limitation on the foregoing doctrines is the principle that the regulations must be reasonable and must bear some relation to the service to be rendered by the practitioner.

The changes in the qualifications of drugless healers, made by the act of 1925, were within the legislative discretion. It is not unreasonable to exact a high school education or its equivalent as a proper standard of general education. Nor is it an arbitrary exercise of legislative power to require a residence course of three sessions, consisting of thirty-six weeks each, in a school of approved standing. The power of the state to require a license implies the power to revoke a license that has been improperly issued. Provision for the revocation of such licenses is made by the act of 1919, whose constitutionality was not under attack. The statute in question merely changes the procedure required for such purpose. The act of 1925 provides for notice and hearing to a licentiate whose license is proposed to be revoked. He is entitled to the compulsory attendance of witnesses and to be represented by counsel. If the issue is determined against him, he has a right to review the action of the director of licenses in the superior court of Thurston County. This procedure abundantly meets the "due process" requirements of the fourteenth amendment to the constitution of the United States. The equal protection of the laws guaranteed by that amendment is secured if the laws operate on all alike, and do not subject the individual to an arbitrary exercise of the powers of government. The statute in question operates alike on all who come within its purview. The presumption is that in its enforcement the director of licenses will act fairly and from a good motive.

A bill of attainder is a legislative act which inflicts punishment without a judicial trial. The statute in question inflicts no punishment. If plaintiffs lose the right to continue the practice of their profession, it will not be as a punishment for some offense committed by them, but because their qualifications do not measure up to the legislative requirements. Nor does the statute in question fall within the classification of ex post facto laws. It has been expressly held that a statute that makes provision for the cancelation of licenses of those engaged in the practice of medicine is not obnoxious to the ex post facto provision of the federal constitution.

Improper Joining of Physicians as Defendants

(Wilder et al. v. Shannon (Ala.), 106 So. R. 69)

The Court of Appeals of Alabama says that there were two reasons why a new trial should have been granted in this case, in which Mrs. Shannon, as executrix, obtained a judgment for damages for the death of her husband in October, 1918, which she alleged was proximately caused by the negligence of the defendants in and about the treatment of her husband, as an employee of a railroad company. In the first place, it is well settled in Alabama that in actions of this kind the plaintiff carries the burden of proof to show by the evidence (1) negligence, and (2) that injuries suffered were the proximate result thereof. In neither particular did the plaintiff discharge that burden in the instant case. The overwhelming weight of the evidence was to the effect that whatever injuries the plaintiff may have suffered were the direct result of the unprecedented and little understood influenza epidemic that swept over the country at the time of the death of her husband. In the second place, the action was in tort and brought against the two defendants jointly. This court found nowhere in the record any evidence showing or tending to show any community of design or interest existing between them. Any wrongs committed by either of them seemed to be entirely separate and

distinct from any committed by the other, and no reason appeared for joining them as defendants. A consideration of the whole record leads the court to the conclusion that the verdict and judgment for the plaintiff were founded in error, and ought not to stand.

Right to Have Expert Examine Injured Part Shown Jury

(Fleming et ux. v. Holleman et al. (N. C.), 130 S. E. R. 171)

The Supreme Court of North Carolina says that plaintiff Fleming, who was seeking to recover damages for personal injuries, while testifying that his injured leg was then swollen, pulled up his trousers and exhibited his leg to the jury. He also indicated a place between the knee and the ankle where the leg was broken. Then he said that there was a difference in the color of the two legs and that "when you press on this injured leg the dent will stay in, . . . the other leg is not like that. There is not much feeling in the injured leg. The most severe pain is right across here" (indicating broken place). After his testimony and that of one of the physicians who had treated him after the injury, the attorneys for the defendants tendered to the plaintiff two physicians and asked leave of the court for them to examine the plaintiff either in the presence of the injury or in a back room. Counsel for the plaintiff asked that this be done in the presence of the physician first mentioned. But the court declined to order the plaintiff to be examined, it appearing that one of the physicians selected by the defendants refused to go to the office of the plaintiff's physician, as there seemed to be some feeling between the two.

Under the facts and circumstances of this case, the supreme court thinks that the defendants had a right to have an expert examine the plaintiff's injured member. This right does not extend except to the injured member or part of the body that the plaintiff voluntarily exhibits to the jury. In the trial of all cases, the purpose is to ascertain the truth. The "inviolability of the person" is not lightly to be impinged; but, when a plaintiff voluntarily waives the inviolability by exposing his person to accentuate the damage, it is but justice that, at the instance of a defendant who may suffer by the exposure, there be expert examination.

Frequently attorneys representing opposing sides in injury cases agree to an examination in the interest of truth and justice, and the practice has become in recent years prevalent and to be recommended. This court has been unable to find any authority when this court has before passed on the question here presented. But, under the circumstances of this case, this court holds that, when the plaintiff voluntarily exhibited the injured member or part of the body to the jury, the defendants had a right to the examination. It is for the trial court in its discretion to allow the examination "under reasonable restrictions"—in the presence of the jury. One of the defendants' requests was "in the presence of the jury." The old saying is applicable: "What is sauce for the goose is sauce for the gander." This court thinks that the weight of authority permits expert examination before the jury under the facts here.

Action on Account for Services "by Order"—"M.D."

(Becker v. Humphries (Ga.), 130 S. E. R. 379)

The Court of Appeals of Georgia, division 2, in affirming a judgment in favor of plaintiff Humphries, says that he sued defendant Becker on an account for $570, and obtained a verdict for $310. The account was for $470 for "visits to J. D. Skinner on order," in December, 1918, and $100 for another physician, "to consultation to order of J. H. Becker." Counsel for the defendant contended that the petition failed to set forth a cause of action because there was no allegation that the plaintiff had been licensed to practice medicine in Georgia. But the court thinks that the allegation was unnecessary. In the first place, it appeared that the physician was located in the state of Florida, and the petition did not show that he practiced in Georgia. The account was for medical services rendered to one J. D. Skinner, without disclosing where they were rendered. So far as appeared from the petition, the patient may have been in Florida or elsewhere. But, regardless of this, it seems to be the rule that in an action by a physician for the value of professional services rendered by him it is sufficient to allege that he is a physician, that he was employed as such, that he rendered the services alleged, and that the reasonable value thereof was the amount sued for. By the weight of authority it was not necessary that the petition should go further and show that he had a license to practice according to the legal requirements of the state in which the services were performed. Of course, if it appears that the physician was practicing without a license, in violation of statute, he cannot recover. But this would ordinarily be a matter of defense. The copy of the account, which was expressly made a part of the petition, showed that the plaintiff was an "M.D.," and this court will take judicial notice that this abbreviation imports prima facie that the plaintiff was a physician.

Again, it was contended that it appeared from the petition that the plaintiff was claiming a liability against the defendant for professional services rendered to a third person, for which it was insisted that the plaintiff could not recover without showing an express agreement by the defendant to pay for the same. Even if so, the petition was sufficient to withstand the attack of a mere general demurrer based on this ground. It alleged that the defendant was indebted on the account, and that the services were rendered "on order," the reasonable inference being that the order was that of the defendant. Furthermore, suit on an open account may be sustained though the evidence shows an express agreement, where it is proved that the plaintiff has fully performed his part of the agreement and nothing remains to be done except for the other party to make payment. In the nature of the action it was not necessary for the plaintiff to allege an express agreement by the defendant to pay, irrespective of whether such agreement should be proved to entitle him to recover. As against the contentions which the defendant made the court holds that there was no error in overruling his general demurrer.

Then, while the evidence failed to show an express promise, the other circumstances in this case, as disclosed by the evidence, were sufficient to authorize an inference of an intention by the parties, at the time, that the services were to be furnished on the defendant's credit. It appeared that Skinner was living on the defendant's farm, but was not an employee. There was no relation between the defendant and the patient such as would raise a legal obligation on the defendant's part to procure and pay for the services of the physician for him. The preponderance of authority is to the effect that a mere request by one person to a physician to render services to another person, to whom the person making the request is under no obligation to supply the same, will not raise an implied promise, in favor of the physician, to pay for the services when rendered. A humane policy encourages the summoning by others of medical aid for those who may be stricken and unable to act for themselves. It would be quite easy in such a case for the physician to inquire whether the person making the request intends to become personally bound and when he fails to do so has no one to blame except himself for having acted on a mere request without an assurance that the party making it intends to incur a personal liability. The physician should remember that persons commonly call for medical aid for the sick solely out of a spirit of kindness, irrespective of relationship, and without any expectation of becoming personally responsible. But the instant case was not one of a mere request for the rendition of services and a compliance therewith by the physician. The circumstances authorized the inference of an intention that the defendant should be liable.

Sticking of Needle into Paralyzed Arm Before Jury

(Anthony v. Public Transit Co. (N. J.), 130 Atl. R. 895)

The Supreme Court of New Jersey holds that, in this action to recover damages for personal injuries where the plaintiff suffered a fracture of his right arm which subsequently resulted in a partial paralysis of the arm, it was not error for the trial court to permit a needle to be stuck into the arm in view of the jury to show that the plaintiff was suffering from paralysis and that his arm lacked sensation. This was a matter within the discretion of the court.

Society Proceedings

COMING MEETINGS

American Association of Industrial Physicians and Surgeons, Philadelphia, May 24-26. Dr. F. L. Rector, 22 East Ontario Street, Chicago, Secretary.
American Bronchoscopic Society, Montreal, Canada, May 29. Dr. Henry B. Orton, 671 Broad Street, Newark, N. J., Secretary.
American Dermatological Association, Philadelphia, May 27-29. Dr. C. Guy Lane, 416 Marlborough Street, Boston, Secretary.
American Laryngological Association, Montreal, Canada, June 3-5. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
American Laryngological, Rhinological, and Otological Society, Montreal, Canada, May 31-June 2. Dr. Robert L. Loughran, 145 West 58th Street, New York, Secretary.
American Neurological Association, Atlantic City, June 1-3. Dr. Henry A. Riley, 870 Madison Avenue, New York, Secretary.
American Ophthalmological Society, Hot Springs, Va., June 14-16. Dr. Emory Hill, Professional Building, Richmond, Va., Secretary.
American Orthopsychiatric Association, New York City, June 5-6. Dr. Karl A. Menninger, Mulvane Building, Topeka, Kansas, Secretary.
American Otological Society, Montreal, Canada, May 31-June 3. Dr. Harold Walker, 390 Commonwealth Avenue, Boston, Secretary.
American Pediatric Society, Niagara Falls, Canada, May 31-June 2. Dr. Howard Childs Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
American Psychiatric Association, New York City, June 8-11. Dr. Earl D. Bond, 4401 Market Street, Philadelphia, Secretary.
American Psychopathological Association, New York City, June 11. Dr. Sanger Brown II, 173 East 70th Street, New York City, Secretary.
American Surgical Association, Detroit, May 24-26. Dr. R. B. Greenough, 8 Marlborough Street, Boston, Secretary.
American Therapeutic Society, Philadelphia, June 10-12. Dr. W. J. Mallory, 1720 Connecticut Ave., N. W., Washington, D. C., Secretary.
Maine Medical Association, Poland Springs, June 10-12. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
Massachusetts Medical Society, Springfield, June 8-9. Dr. W. L. Burrage, 182 Walnut Street, Brookline, Secretary.
Medical Library Association, Ann Arbor, Mich., June 8-9. Miss Harriet Wilson, 535 North Dearborn Street, Chicago, Secretary.
Montana, Medical Association of, Billings, July 16-17. Dr. E. G. Balsam, 222 Hart-Albin Building, Billings, Secretary.
National Association for the Study of Epilepsy, New York City, June 7-8. Dr. A. L. Shaw, 108B The Albiston, Utica, N. Y., Secretary.
New Hampshire Medical Society, Concord, May 25-26. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
New Jersey, Medical Society of, Atlantic City, June 17-19. Dr. J. B. Morrison, 97 Halsey Street, Newark, Secretary.
North Carolina, Medical Society of the State of, Wrightsville Beach, June 15-17. Dr. L. B. McBrayer, Southern Pines, Secretary.
North Dakota State Medical Association, Minot, May 25-26. Dr. A. J. McCannel, Minot, Secretary.
Oklahoma State Medical Association, Oklahoma City, June 22-24. Dr. C. A. Thompson, 609 Barnes Building, Muskogee, Secretary.
Rhode Island Medical Society, Providence, June 3. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary.
Texas, State Medical Association of, Houston, May 24-27. Dr. Holman Taylor, 207½ West 11th Street, Fort Worth, Secretary.
West Virginia State Medical Association, Morgantown, May 25-27. Mr. S. O. Neale, 211 Smallridge Building, Charleston, Executive Secretary.
Wyoming State Medical Society, Lander, July 12-13. Dr. Earl Whedon, Sheridan, Secretary.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Twentieth Annual Meeting, held at New York, March 30-April 1, 1926

(Continued from page 1577)

Experimental Production of Lung Abscess

DRS. ELLIOTT C. CUTLER, SIMON A. SCHLUETER and I. F. WEIDLEIN, Cleveland: Lung abscess can be reproduced in animals extremely well by the use of infected emboli, but we failed to produce lung abscess by the introduction of infected material and various types of organisms. In fifteen experiments not a single lung infection was produced. We believe that a certain number of postoperative lung abscesses may be due to infected emboli from the operative field. If this is so, such complications can only be reduced; they can never be totally avoided. The gentle handling of tissue, careful surgical technic and the greatest asepsis will reduce the morbidity from lung abscess.

DISCUSSION

DR. JAMES MORLEY HITZROT, New York: I have long felt that aspiration does not explain the formation of these pulmonary suppurations as well as does embolism.

DR. HOWARD LILIENTHAL, New York: The ordinary lung abscesses resulting from blood infection are multiple in character; those resulting from surgical operations (aspiration?) are usually single, or there are two or three discrete foci, sometimes on both sides, but ordinarily only in one lobe. That seems to me to be better explained by the inhalation theory than by the mere accidental entrance of organisms into the blood stream.

DR. PAUL W. ASCHNER, New York: One cannot explain the abscesses that occur in clean surgical cases on the basis of embolism because these emboli are aseptic. They produce ordinary infarction, and only rarely does secondary infection occur in an aseptic pulmonary infarction. Dr. Cutler's experiments are most ingeniously conceived and executed, but from a study of human pathologic material, I cannot subscribe to the view that postoperative lung suppuration is dependent, as a rule, on embolism.

DR. M. C. MYERSON, New York: I am strongly in favor of the aspiration route of infection. Pulmonary complications probably follow aspiration if there is some condition in the smaller bronchioles of the lung tissue that will prevent the expulsion of aspirated material. There is such a thing as congenital bronchiectasis, dry bronchiectatic cavities which exist unsuspected. It is on this lesion that a pulmonary suppuration may become superimposed in the presence of a general anesthesia.

Liver Function Studies

DR. CHARLES S. MCVICAR, Rochester, Minn.: In studying liver function it must be remembered that laboratory tests supplement, but do not displace, clinical observation. Bile pigment is considered to be formed of broken down hemoglobin; that is, hemoglobin without iron. The product is manufactured by the reticulo-endothelial system, represented by cells of spleen and bone marrow. With the liver entirely removed, the bile pigment is formed but is not excreted; therefore the liver is mainly an excretory organ. In hemolytic jaundice there is more bile pigment formed than the liver can excrete, and the bile is dammed back into the blood stream. Tests for liver function include the Vandenburg test, which gives an estimate of the bilirubin curve in the patient and is used as an indication for or against operation; thus, a rising bilirubin curve indicates danger of congestion and hemorrhage and warns against operation; a declining curve shows indication for operation. The dye retention test does not coincide with the amount of jaundice, for with slight jaundice there may be considerable dye retention. In cirrhosis there is often much dye retention. The method of cholecystography is founded on the amount of dye excreted by the liver. The opaque substance is taken with the evening meal, and the time it takes to reach the gallbladder is estimated. A diseased gallbladder may partially fill, but in severe cases of liver obstruction the opaque substance does not reach the gallbladder. In such cases, intravenous glucose injection may prolong life. In regard to urea excretion tests, experimental work has shown that in severe cases of retention a limited nitrogenous intake is not called for.

DISCUSSION

DR. HOWARD SHATTUCK, New York: Recent progress has enlarged our understanding of liver function, but much remains to be done. The quantitative estimation of bile salts in the blood is very much needed and will increase our understanding of the relation of the bile salts to liver disease. When surgical intervention is contemplated on the liver or bile passages, careful tests should be made, as we often see fatal results as a result of failure to comply with such a program. I should like to ask Dr. McVicar how often he sees cases of cholemia among the group of operative patients previously tested as he describes.

DR. A. DIAMOND, New York: In making liver function tests we must allow for the fact that the liver possesses a large reserve of safety, and in speaking of one function we must remember that the liver accommodates itself to the performance of either function while the other is affected. Thus, in considering the Rosenthal-Rowntree method we must admit that in many instances it does not tell us what is taking place in the liver, but simply what dye cannot get through; the latter fact may be simply due to mechanical obstruction in the common duct or a growth in the ampulla of Vater. The improvement in the urobilogen test in the urine was worked out by Wallace and myself. It is important as a test for

telling us what is taking place in the liver parenchyma, so that we can differentiate between mechanical obstruction in the common duct or that due to parenchymatous change in the liver, such as catarrhal jaundice. The urobilogen rises very high in the urine because there is never complete stenosis of the common duct. On the other hand, in carcinoma of the pancreas obstruction is complete and no bile gets into the intestine; therefore, no urobilogen is found in the urine. This is a simple test and can tell us promptly whether it is mechanical obstruction, such as carcinoma, or a catarrhal formation in the liver.

DR. CHARLES S. MCVICAR, Rochester, Minn.: In regard to the question about cholemia, I did not mention cholemia and I do not know that I can discuss it. Undoubtedly there is a hazy condition of liver insufficiency which may be thought to be comparable to uremia, but it is not very clear cut. There is a condition of liver failure which is not due to hypoglycemia. The hepatectomized dog shows a certain decline of blood sugar, but patients rarely do. In regard to urobilogen, before we can assume results of these functional tests, we must first prove that urobilogen is formed in the intestine and also in the bile passages. Urobilogen is formed in the ducts, but may be it has to go into the intestine to be absorbed.

Neuron Block for Relief of Pain: Its Use in Angina Pectoris

DR. GEORGE I. SWETLOW, Brooklyn: This method has been used to relieve pain in angina pectoris, in the gastric crises due to syphilis, in pleurisy, in laryngeal pain due to tuberculosis, in cancer of the tongue, and in many other conditions. The work of neuron blocking is founded on the anatomic basis that the nerves of the various sympathetic ganglions enosculate with one another. If certain fibers are extirpated, others will take it up and the irritation will pass into the centers of consciousness in the form of pain. There is pain in the skin area supplied by the dorsal root which is adjacent. Therefore, if one can locate the dorsal root ganglion that is receiving the painful stimulation one can intercept the painful stimulus from entering the spinal cord, and thus prevent its reaching the brain. This method was tried in eight patients suffering from severe cardiac conditions, six of whom had coronary thrombosis. Four patients died later, but they were in very serious condition. In the cases of gastric crises, the painful stimulus starts in the epigastric plexus. Injection of the dorsal root here gave good results in preventing pain. In cases of severe pleuritic pain in tuberculosis or carcinoma of the pleura, the pain was relieved. In one case, cancer of the tongue, the pain was not relieved.

DISCUSSION

DR. JOHN WYCKOFF, New York: The criticism aimed at this method is that it does not cure; it is merely palliative. In regard to any measure of this kind we have to ask ourselves: 1. What is the inconvenience or danger? 2. What is the quantitative or qualitative relief? If the relief is not greater than the danger or inconvenience, then relief is of no value. With the use of surgery, the danger or inconvenience to most patients is greater than the relief received. The patients, even if relieved of pain, must die eventually; therefore this procedure does not lengthen life. The physician must consider that the patient is suffering from a malady in which sudden death is likely to occur, and he must be willing to bear the brunt of criticism if the patient dies suddenly after such treatment has been tried.

DR. ALEXANDER LAMBERT, New York: Many more people are arriving at years of senescence; therefore there are many more suffering from cardiac symptoms than formerly. We may be able to give relief from pain to many of these people, if we cannot do more for them. The pain in the anginal syndrome is not due to a similar process in all cases. To understand the anginal syndrome we must study the sympathetic system as part of the general nervous system. It has its efferent and afferent fibers, but the gangilons are motor ganglions and are out at the periphery. Therefore, to stop the pain one must reach the posterior root of the spinal nerve and at that point one can head off the pain before it reaches the thalamus. This is where Dr. Swetlow's procedure is of use. Operations on anginal patients have succeeded in some cases; in some they have failed because of the fact that every nerve is not the same in every man. The superior cardiac nerve of the sympathetic has been cut and has stopped the pain in some cases. When one cuts off the superior sympathetic ganglion one cuts off the ganglion of several sympathetic centers, such as the high carotid sphenopalatine ganglion, which is a very valuable portion of the sympathetic and should not be lightly discarded. Therefore blocking is better than taking out what cannot be replaced. One strikes at the accessory fibers of the heart which help in the conductivity and contractility of the ventricles, and one leaves the heart with inhibitory fibers. The result of this is that the patient dies with great edema of the lung. The superior thoracic ganglion should not be touched at all. Something very valuable has been cut off, but one can cut above that. One can cut off afferent fibers that go to the vertebral arteries. In such a case blocking is wiser than cutting. When there is pain coming from coronary disease, the afferent fibers can be cut out. If there is pain in the epigastrium and in the arms, it comes from the same dorsal segments that the splanchnic supplies and cannot be reached. They go behind and cannot be blocked off. About 10 per cent of coronary patients have pain in the arms. In 300 cases of coronary thrombosis only 25 per cent gave previous warning that they had cardiac disease; but when the pain is intense it is worth while to take the chance of blocking the impulse before taking the chance of cutting with the possible result of edema of the lung.

Chronic Nephritis

DR. NELLIS B. FOSTER, New York: Heart disease heads the list of causes of death. It is often combined with chronic nephritis. Recognition of this condition in hospital patients is not enough. The treatment at that stage is merely palliative. The disease has then been of long duration because the subjective symptoms are slight and the disease escapes early detection. Life insurance companies discover many early cases, and make a practice of rejecting patients who show an albuminuria. The insurance companies can prove that there is an earlier death rate among persons showing albuminuria, although, if it occurs before 30, it is as likely to be tuberculosis as nephritis. After 40, no case of albuminuria can be dismissed even if there is no sign of elevation of blood pressure. Insurance figures show that an increase of 10 degrees in blood pressure is equal to an increase in mortality rates of from 10 to 14 per cent.

DISCUSSION

DR. JOHN A. LICHTY, Clifton Springs, N. Y.: The family physician has been impressed that the study of urine is a very complex matter requiring chemical apparatus, so that he avoids doing the very simplest test to determine whether or not the patient has nephritis. From the time of Bright to the present day, the studies in kidney disease have centered largely about the other elements of the urine, such as albumin, casts, various cells, uric acid, urea toxins, and the elimination of dyes. After this came the chemical studies of the blood, including urea, uric acid and creatinine, all interesting and somewhat helpful, but none giving any earlier evidence of chronic nephritis than the study and comparison of the day and night urine—the so-called fixation and concentration test. Dr. Roger Hubbard recently completed an extensive study of seventy cases of nephritis of all forms, applying all the tests in common use, and in some of which necropsies were done, with the result that there was revealed an interesting sequence of positive findings as the disease progressed; but not a single test gave earlier evidence of kidney disease than the fixation and concentration test. In fact, it seemed that the more difficult and complex the test the less helpful it was in showing early involvement of the kidney. If the purpose is only to determine the margin of safety for a patient undergoing the stress and strain of disease or experiencing the ordinary crises of life, most of the reliable tests for kidney function may be of use; but the test which gives the earliest evidence of kidney disease is the one most desirable.

(To be continued)

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1924. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

9: 157-240 (March) 1926

Limitations of Slit Lamp Microscopy of Living Eye and Possibility of Overcoming Them. L. Koeppe, Rochester, N. Y.—p. 157.
Glioma of Retina. C. W. Rutherford, Indianapolis.—p. 171.
Operations for Glaucoma. S. A. Durr, San Diego, Calif.—p. 174.
Field and Fundus Changes in Endocrine Dysfunction. W. D. Rowland, Boston.—p. 178.
Choked Disk and Vitreous Opacities Following Fracture of Skull. C. Loeb, Chicago.—p. 184.
Senile Cataract Extraction. E. A. Knorr, Baltimore.—p. 186.
Relation of Aperture of Eye to Ocular Function. A. Cowan, Philadelphia.—p. 191.
Use of "Afenil": A Warning. L. L. Mayer, St. Louis.—p. 192.

American Journal of Public Health, Albany, N. Y.

16: 98-206 (Feb.) 1926

Advances in Sanitary Practices. W. F. Walker, New York.—p. 97.
Laboratory Differentiation of Smallpox and Chickenpox. T. G. Hull and R. W. Nauss.—p. 101.
Progress in Health Education and Publicity. J. A. Tobey, Washington, D. C.—p. 106.
Vitamin Content of Foodstuffs. W. H. Eddy, New York.—p. 109.
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Relation of Health Departments to Industrial Hygiene. C. T. Graham-Rodgers, New York.—p. 117.
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Method of Analyzing Statistical Data by Coding and Adding Machine. R. Jordan, New Haven, Conn.—p. 123.
Recent Developments in Industrial Hygiene. H. F. Smyth, Philadelphia.—p. 126.
Laboratory in Public Health Work. S. C. Prescott, Cambridge, Mass.—p. 130.
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Chlorine Treatment of Contaminated Oysters. C. Krumwiede, W. H. Park and others, New York.—p. 142.
Use of Organic Mercurials, Particularly Mercurochrome. E. C. White, Baltimore.—p. 153.

American Journal of Psychiatry, Baltimore

5: 345-467 (Jan.) 1926

Laboratory Method in Psycho-Analysis. T. Burrow, Baltimore.—p. 345.
Psychotic Children: Treatment and Prophylaxis. A. A. Brill, New York.—p. 357.
Intensive Use of Bromides in Functional Psychoses. W. W. Wright, Utica, N. Y.—p. 365.
Newer Psychiatry. W. Healy, Boston.—p. 391.
Psychiatric Departments in General Hospitals. G. K. Pratt, Boston.—p. 403.
Nonmedical Workers and Mental Hospital. H. C. Woolley and R. W. Hall, Washington, D. C.—p. 411.
Research Problems in Epilepsy. C. E. Gibbs, New York.—p. 415.
Epileptoid Reactions in Children. V. C. Branham, Ellenville, N. Y.—p. 423.
Record of Jesse Murphy: Desperate Felon. N. S. Yawger, Philadelphia.—p. 431.

American Review of Tuberculosis, Baltimore

13: 193-291 (March) 1926

Modern Sanatorium Treatment of Tuberculosis as Applied in Fitzsimons General Hospital. E. H. Bruns, Denver.—p. 193.
*Case of Limited Miliary Tuberculosis. J. V. Falisi, Denver.—p. 211.
*Recovery from Tuberculous Meningitis. B. T. McMahon, New York.—p. 216.
Syphilis of Lung: Four Cases. R. C. Kirkwood, Salt Lake City.—p. 220.
Treatment of Bilateral Lung Suppuration. J. J. Singer and E. A. Graham, St. Louis.—p. 225.
*Pneumoperitoneum in Treatment of Tuberculous Peritonitis. O. M. Guilbert, Boulder, Colo.—p. 240.
Adaption of Kolmer-Wassermann Technic to Tuberculosis Complement Fixation. J. S. Woolley and F. G. Petrik, New York.—p. 243.
*Standardization of Tuberculin. J. D. Aronson, Philadelphia.—p. 263.
Extent of Normal Variability of Vital Capacity of Lungs of Children. C. A. Stewart, Minneapolis.—p. 272.
Vital Capacity of Lungs of Children Having Masked Juvenile Tuberculosis. C. A. Stewart, Minneapolis.—p. 276.

Limited Miliary Tuberculosis.—In Falisi's case the original focus of tuberculosis was an apparently small but active lesion in the right lung. From this hematogenous dissemination, the disease was apparently limited to the choroid plexus and base of the brain.

Recovery from Tuberculous Meningitis.—The case recorded by McMahon was typically clinical meningitis in its onset and symptomatology. The presence of tubercle bacilli in the spinal fluid, as shown by animal inoculation, proved it to be tuberculous. The unusual features were the number of exacerbations and remissions. The disappearance of tubercle bacilli from the spinal fluid suggested circumscription and encapsulation of the lesions. The small number of bacilli and the absence of meningeal hypertension indicated that the lesion was not predominantly of the exudative type, but possibly proliferative in character.

Pneumoperitoneum in Treatment of Tuberculous Peritonitis.—Guilbert has treated four cases of tuberculous peritonitis with serous effusion by aspiration of the fluid and the introduction of filtered air. These patients have remained well and are working, one after five years, and one for nearly two years. The remaining two cases are very recent ones. In one case both a pneumoperitoneum and a pneumothorax have been done. Guilbert has also used pneumoperitoneum in connection with laparotomy in two cases of advanced tuberculous enterocolitis, with apparently some relief but no permanent benefit, as both patients died.

Standardization of Tuberculin.—The strength of nine samples of commercial tuberculin and one sample of standard tuberculin was determined by Aronson by means of the intracutaneous injection into tuberculous guinea-pigs, and compared with their toxicity for tuberculous guinea-pigs, with complement fixation, and with the precipitin reaction. These samples of tuberculin varied greatly in strength.

Archives of Internal Medicine, Chicago

37: 297-450 (March 15) 1926

Experimental Renal Insufficiency. H. Anderson, Duluth.
*I. Controls on Normal Diet.—p. 297.
II. Protein Diet Experiments.—p. 313.
*Hemochromatosis and Chronic Poisoning with Copper. F. B. Mallory, Boston.—p. 336.
*Primary Carcinoma of Liver. V. S. Counseller and A. H. McIndoe, Rochester, Minn.—p. 363.
*Effect of Liver Damage on Cholecystography in Dogs by Use of Sodium Tetraiodophenolphthalein. B. M. Fried and L. R. Whitaker, Boston.—p. 388.
*Carbon Monoxide Poisoning: Treatment. D. C. Walton, W. A. Eldridge, M. S. Allen and M. G. Witherspoon, Edgewood, Md.—p. 398.
*Enzymic Activity of Duodenal Contents Following Ingestion of Pancreatin. A. H. Aaron, J. V. Wadsworth and H. C. Schneider, Buffalo.—p. 408.
Relation of Thrombocytes to Hemorrhagic Diathesis. I. W. Held, New York.—p. 414.
*Value of Starch-Iodine Reaction as Test of Pancreatic Function. G. M. Piersol, H. L. Bockus and H. H. Shay, Philadelphia.—p. 431.
*Metabolic Aspects of Calcium Therapy. A. P. Briggs, St. Louis.—p. 440.
*Effects of Intravenous Injections of Acriflavine in Sepsis. C. F. Tenney and J. Lintz, New York.—p. 445.

Experimental Renal Insufficiency.—The purpose of Anderson's study was (*a*) to determine the blood pressure changes in low renal function or insufficiency and (*b*) to determine the possible influence of high or low protein diet on the course of chronic renal disease. He found that removal of two thirds of the kidney substance in rabbits results in a retention in the blood of urea and creatinine, which either increases progressively in intensity until death results, or decreases progressively until normal values are once more attained. A high protein diet causes hypertrophy of the kidneys in normal rabbits not operated on, but no further change in the kidney remnant than to further augment the hypertrophy. A high protein diet causes a retention of creatinine and urea in the blood in rabbits from which a portion of kidney substance has been removed. It is proportionate to the amount of kidney that has been removed. Hypertension is not caused in rabbits by renal insufficiency per se, nor by a high protein diet, even in the presence of a low renal function, nor by prolonged retention of creatinine and urea in the blood. The high protein diet here given results in a marked atherosclerosis of the aorta which does

not extend to the small arteries. These changes in the aorta do not result from low renal function or from prolonged retention of creatinine and the urea in the blood.

Copper Poisoning Causes Hemochromatosis.—Mallory points out that evidence is slowly but steadily accumulating in favor of the view that chronic poisoning with copper causes the symptom complex known under the different names of hemochromatosis, bronzed diabetes and pigment cirrhosis. Copper is an exceedingly useful and indispensable metal in many ways, but it should not be employed where it may come in contact with foods or drinks, especially if they contain acids of any sort, because it is so readily dissolved by many of them. This would exclude its use for cooking utensils of any sort, for shakers of cocktails and acid drinks, and for the worms of the condensers in stills. Its use in pipes for drinking water and for hot water heaters is probably without danger.

Carcinoma of Liver.—Five cases of primary carcinoma of the liver are described by Counseller and McIndoe. Four were hepatomas or primary carcinomas of the liver cells, and one was a cholangioma or carcinoma of the bile ducts. These cases occurred among 5,976 necropsies, together with 220 cases of secondary carcinoma of the liver and 127 cases of portal cirrhosis. The five cases reported were associated with intrahepatic metastasis by way of the portal and the hepatic veins, but in only two cases were extrahepatic growths present. All the cases were associated with cirrhosis of the portal type. The histories in three cases point to a preceding cirrhosis, and in all these cases the microscopic examination of the connective tissue indicated a long standing process. The relation between the hyperplastic liver tissue and the malignant cells is emphasized. The authors believe that from 3 to 4 per cent of cases of cirrhosis, particularly of the portal type, will become carcinomatous.

Cholecystography and Liver Disease.—The results noted by Fried and Whitaker have shown that a moderately damaged liver does not interdict the use of sodium tetraiodophenolphthalein. The existence of presumed or obvious hepatic disease in man should not necessarily preclude the employment of the drug for purposes of cholecystography in the clinic.

Treatment of Carbon Monoxide Poisoning.—There is a difference of opinion as to the relative value of the different treatments of carbon monoxide poisoning. Walton and his associates endeavored to determine relative values by means of experiments on dogs. It was found that in dogs suffering from carbon monoxide asphyxia the difference in elimination time between oxygen treated and oxygen plus 5 per cent carbon dioxide treated subjects is slight. Since the rate of elimination under pure oxygen is almost as rapid as with the oxygen plus 5 per cent carbon dioxide, and since the oxygen treatment is more readily obtainable, it is recommended that its use be continued, particularly in localities where transportation is difficult. The air plus 5 per cent carbon dioxide treatment should be of value for rescue parties sent to inaccessible mines, and especially in military operations.

Enzymic Activity of Ingested Pancreatin.—Aaron et al. concluded that a properly prepared and ingested pancreatin solution will pass through the stomach rapidly enough to insure the retention of a considerable portion of its original proteolytic, lipolytic and amylolytic activity when it reaches the duodenum.

Iodine Test of Pancreatic Function.—Piersol et al. used the Barsler test but modified it by increasing the amount of iodine solution added to each of the ten tubes by 0.05 cc. (1 drop) so that 10 drops, or 0.5 cc., are added to the tenth tube. It is asserted that with the modifications it has been possible to obtain consistent results from day to day on the same patient even though the iodine absorption factor varied greatly.

Metabolic Aspects of Calcium Therapy.—Briggs asserts that calcium acetate given by mouth causes the diversion of a considerable amount of the excreted phosphoric acid from the urine to the feces. The relief from this phosphoric acid load necessitates the synthesis of a smaller amount of ammonia by the kidney. The administration of calcium acetate affords a means of correcting the phosphoric acid retention in nephritis free from the disadvantages of alkali retention and resulting edema which is observed with sodium bicarbonate therapy.

Effect of Acriflavine on Sepsis.—Of eleven patients with generalized infection who were treated by Tenney and Lintz with intravenous injections of neutral acriflavine, six had positive blood cultures. Of these six, five died despite the treatment. The sixth case, one of typhoid fever, ran the usual course, and showed no shortening of the time necessary to procure negative stool cultures for release from quarantine. The authors have seen no improvement following the intravenous use of neutral acriflavine in cases of sepsis or bacteremia. There was spontaneous recovery in two cases of *Streptococcus hemolyticus* sepsis.

Archives of Neurology and Psychiatry, Chicago

15: 281-404 (March) 1926

Meninges in Lower Vertebrates Compared with Those in Mammals. C. U. A. Kappers, Amsterdam.—p. 281.
*Encephalitis Periaxialis Diffusa of Schilder: Case. S. Brock, P. M. Carrol and L. Stevenson, New York.—p. 297.
*Spontaneous Escape of Cerebrospinal Fluid Through Nose: Occurrence with Brain Tumor. C. E. Locke, Jr., Cleveland.—p. 309.
*Bulbocapnine: Use in Treatment of Tremor and in Experimental Production of Basal Ganglion Symptomatology. H. Mella, Boston.—p. 325.
*Presence of Oxytocic Substance (Posterior Hypophysis Extract) in Cerebrospinal Fluid. S. Shapiro, New York.—p. 331.
*Toxemias Occurring in Early Stages of Mental Disease. H. D. McIntyre, A. P. McIntyre and R. J. Norris, Cincinnati.—p. 341.
*Spinal Fluid in Epilepsy: Fifty Cases. H. A. Patterson and P. Levi, Sonyea, N. Y.—p. 353.
*Xanthochromia in Epidemic Encephalitis: Three Cases. D. Rothschild, Boston.—p. 365.
Difficult Urination Associated with Intracranial Tumors of Posterior Fossa. E. Holman, Cleveland.—p. 371.

Encephalitis Periaxialis Diffusa.—Study of the case reported by Brock et al. throws light on the pathogenesis of the disease. It evidently began in the occipital lobes, although not at the extreme tip. The disease was bilateral and evidently spread forward by continuity. The peculiar "large globoid cells" observed in this disease resemble endothelial cells, and it is possible that they are associated with the proliferation of blood vessels that takes place in the affected regions.

Escape of Cerebrospinal Fluid Through Nose in Cases of Increased Intracranial Pressure.—In every one of the series of proved cases studied by Locke, spontaneous cerebrospinal rhinorrhea was associated with internal hydrocephalus and increased intracranial pressure. The most common lesion which produces a combination of these two factors is a cerebral neoplasm, but inflammatory or congenital obstruction of the cerebrospinal fluid also may be responsible. In this series the communication between the nose and the cerebrospinal fluid pathways occurred through the cribriform plate.

Bulbocapnine.—Bulbocapnine is one of eleven alkaloids from *Corydalis cava*. Bulbocapnine will cause a cessation of tremor in many cases of paralysis agitans. The treatment is palliative, but not curative. The experimental work done by Mella on animals seems to indicate that bulbocapnine may also be of value in the experimental study of catatonia.

Cerebrospinal Fluid Not Oxytocic.—Of twenty-eight cerebrospinal fluids obtained by Shapiro from twenty-five different patients, none caused an oxytocic effect on the virgin guinea-pig uterus. On the contrary, he observed a tendency of these fluids to inhibit contraction of the isolated uterus of the guinea-pig. He failed to obtain evidence to show that the intravenous injection of pituitary extract causes an increased secretion of the active principle present in the posterior lobe of the hypophysis into the cerebrospinal fluid within three minutes after the injection.

Toxemias in Early Stages of Mental Disease.—Evidence is presented by McIntyre et al. to show that manic-depressive, schizoid and confusional reactions may, in their early stages, be accompanied by signs of toxemia: leukocytosis, acidosis, fever and nitrogen retention. Treatment directed toward the elimination of the toxemia is frequently effective in bringing about a mental recovery. The toxins, acid or otherwise, so affect the hydrated colloids of the nerve cell as to bring about a cracking of the emulsion of which the nerve cell is composed. Treatment to be effective must take place before this irreversible cracking point is reached.

Spinal Fluid in Epilepsy.—An examination of fifty spinal fluids of epileptic patients, made by Patterson and Levi to determine whether such fluids exhibit any abnormalities, in the main was largely negative.

Xanthochromia in Epidemic Encephalitis.—Of thirty-two patients with epidemic encephalitis made the subject of study by Rothschild, three, or 9.38 per cent, showed xanthochromic spinal fluid.

Archives of Pathology and Laboratory Medicine, Chicago

1: 329-498 (March) 1926

*Biometric Studies in Pathology. IV. Statistical Characteristics of Population Composed of Necropsied Persons. R. Pearl and A. L. Bacon, Baltimore.—p. 329.
*Compensatory Hypertrophy and Hyperplasia of Islands of Langerhans in Pancreas of Child Born of Diabetic Mother. S. H. Gray and L. C. Feemster, St. Louis.—p. 348.
*Thrombopenic Purpura. L. F. Alrutz, J. L. Nortell and E. C. Piette, Oak Park, Ill.—p. 356.
Goundou in Monkey: Case. A. Massaglia, University, Miss.—p. 361.
*Four Unusual Malignant Tumors of Liver. L. W. Smith, Boston.—p. 365.
Recurrent Lipomatous Tumors of Groin. Liposarcoma and Lipoma Pseudomyxomatodes. R. H. Jaffé, Chicago.—p. 381.

Biometric Studies in Pathology.—A detailed account is presented by Pearl and Bacon of the biometric characteristics of the age, sex and racial distributions of persons included in 7,500 necropsy records. The data presented afford the requisite statistical basis for special biometric studies of particular pathologic conditions.

Increase in Insular Tissue of Pancreas in Child of Diabetic Mother.—A case is reported by Gray and Feemster in which the pancreas of a child born of a diabetic mother contained approximately twenty-four times as much insular tissue as the normal pancreas. The increase in maternal blood sugar is suggested as the stimulus which called forth the increase in insular tissue in the pancreas of the child. It is further suggested that hypoglycemia, the result of this insular hypertrophy and hyperplasia, may play a rôle in the sudden death of the baby. Associated with the hypertrophy of the islands of Langerhans was a hypertrophy of many medullary cells of the suprarenals.

Splenectomy for Thrombopenic Purpura.—The beneficial influence of splenectomy on extremely severe acute essential thrombopenia is shown by the case reported by Alrutz, Nortell and Piette. In about four and a half months the blood platelet count rose from 15,000 to 210,000. The erythrocyte count rose from 3 million to 4 million; the leukocyte count from 7,250 to 8,700. The differential count was within fairly normal limits.

Malignant Tumors of Liver.—Four unusual malignant tumors involving the liver are presented by Smith: (1) a primary hepatoma in a girl of 10; (2) a metastatic leiomyosarcoma in a woman of 50; (3) a primary melanoma of the liver in a woman of 68, and (4) a probable angiosarcoma in a woman of 36.

Archives of Physical Therapy, X-Ray, Radium, Omaha

7: 127-188 (March) 1926

Physiotherapy Abroad. D. Koback, Chicago.—p. 127.
Application of Radiology and Physiotherapy to Gynecology. I. Radium. F. B. Block, Philadelphia.—p. 137.
Pneumoperitoneum. II. Diagnosis. E. C. Sage, Omaha.—p. 140.
Roentgen-Ray Dosage. A. Bachem, Chicago.—p. 151.
Bronchial and Peribronchial Conditions Treated by Combined Diathermic and Galvanic Technic. J. U. Giesy, Salt Lake City.—p. 162.

Atlantic Medical Journal, Harrisburg, Pa.

29: 363-426 (March) 1926

Constitution and Disease. G. Draper, New York.—p. 363.
Prevention of Deformity. J. H. Galbraith, Altoona, Pa.—p. 366.
Treatment and Correction of Spinal Deformity. A. G. Davis, Erie, Pa.—p. 369.
Correction of Deformities of Lower Extremities. D. P. Willard, Philadelphia.—p. 373.
Treatment of Deformities of Upper Extremity. C. C. Yount, Pittsburgh.—p. 375.
Causes of Cancer of Skin. J. F. Schamberg, Philadelphia.—p. 377.
Diagnosis and Prognosis of Skin Malignancies. L. Hollander, Pittsburgh.—p. 379.
Treatment of Epithelioma of Skin. G. E. Pfahler, Philadelphia.—p. 381.
Complications Following Tonsillectomy. H. H. Lott, Philadelphia.—p. 387.

Canadian Medical Association Journal, Montreal

16: 221-347 (March) 1926

Diabetes and Insulin. F. G. Banting, Toronto.—p. 221.
Hospital: Its Long Crusade. W. W. Chipman, Montreal.—p. 233.
Involutionary Changes in Prostate and Female Breast in Relation to Cancer Development. H. Oertel, Montreal.—p. 237.
*Hypertonic Saline in Adynamic Ileus. J. W. Ross, Toronto.—p. 241.
*Pernicious Anemia. I. In Western Canada. E. W. Montgomery, Winnipeg.—p. 245.
*Id. II. Chloride Metabolism in Anemias, Especially Pernicious Anemia. M. G. Rioch and A. T. Cameron, Winnipeg.—p. 251.
Diagnosis and Treatment of Obstruction of Small Intestine in Adults. J. McKenty, Winnipeg.—p. 260.
*Arteriotomy for Embolus Obstructing Circulation in Extremity. J. G. MacDougall, Halifax, N. S.—p. 265.
Industrial Physician. W. I. Clark, Worcester, Mass.—p. 269.
Physician in Industry. W. L. T. Addison, Toronto.—p. 272.
Industrial Intoxication by Lead, Benzol and Nickel. N. Gwyn, Toronto.—p. 275.
Notification of Occupational Diseases. O. A. Cannon, Hamilton.—p. 278.
Handicapped Surgical Patient. I. Diabetic Patient. F. N. G. Starr and A. G. Fletcher, Toronto.—p. 281.
Id. II. Due to Cardiovascular Disease. F. H. Lahey and B. E. Hamilton, Boston.—p. 283.
Id. III. Due to Benign Hypertrophy of Prostate. W. Walters, Rochester, Minn.—p. 285.
Rabies. R. H. Malone, Montreal.—p. 288.
Toxemias of Pregnancy. W. K. Maclellan, Halifax.—p. 292.

Hypertonic Saline Injections in Adynamic Ileus.—Ross asserts that animal experiment and clinical proof justify the intravenous administration of hypertonic saline solution in this condition. Results may be expected where other known agents fail.

Researches on Pernicious Anemia.—Montgomery discusses the activities of the Medical Research Committee of the University of Manitoba in promoting the work being done under the "Gordon Bell Memorial," established in 1924, by the College of Physicians and Surgeons of Manitoba, in studying the etiology of pernicious anemia.

Chloride Metabolism in Pernicious Anemia.—Rioch and Cameron report on some of their work done in the study of sixteen cases of pernicious anemia in the active phase and ten cases in remission. None showed the presence of hydrochloric acid in the gastric secretion. Evidence is adduced that in pernicious anemia not only is there complete gastric achlorhydria, but further, that in some, if not all, cases, the chloride ion is absent from such gastric secretion as may occur. In six cases of pernicious anemia examined for peptic activity, three showed no activity, two very slight activity, and in one the activity was somewhat below normal. The dependence of the value of whole blood chloride on the proportion of cells to the plasma is emphasized. Determinations of whole blood chlorides are valueless for most clinical purposes. The plasma chloride content is relatively constant in the anemias. In the active stage of pernicious anemia, especially when the hemolytic changes precede nervous symptoms, there is a slight but undoubted lowering of cell chlorides. In the remissive stage of pernicious anemia, and in the other anemias studied, the average figure for cell chlorides does not markedly differ from the normal, but the extremes show wider variations. There is in the active stage of pernicious anemia a marked upset in chloride metabolism, characterized by lowering of the blood cell chlorides, and in some, if not all, cases, by the absence of the chloride ion (as well as hydrochloric acid) from any gastric secretion that occurs. The former abnormality may disappear in the remission stage.

Arteriotomy for Obstruction by Embolus.—Under local anesthesia, MacDougall removed an embolus about seven-eighths inch (2.2 mm.) long and weighing 27 grains (1.8 Gm.) from the common femoral artery of a man, aged 65. The embolus was lodged at the bifurcation of the common femoral and for three-fourths inch (19 mm.) above it. The result was a perfect one in every way.

Colorado Medicine, Denver

23: 75-108 (March) 1926

Bronchoscopy as Aid in Diagnosis and Treatment of Suppurative Diseases of Lung. R. M. Lukens, Philadelphia.—p. 78.
Needs of Blind and New Colorado Law. E. Jackson, Denver.—p. 84.
Empyema in Children. G. B. Packard, Denver.—p. 88.

Gallbladder Visualization by Administration of Radio-Opaque Substances. N. B. Newcomer, E. Newcomer and C. A. Conyers, Denver.—p. 94.
Psychopathology-Anxiety. L. H. Ziegler, Denver.—p. 102.

Endocrinology, Los Angeles

10: 1-104 (Jan.-Feb.) 1926

*Progressive Lipodystrophy and Hyperthyroidism. G. Marañon and J. B. Soler, Madrid.—p. 1.
Gigantism: Case. N. A. Schereschewsky, Moscow.—p. 17.
*Relation Between Age at Initiation of and Response of Body Growth to Thyroid and Parathyroid Deficiency. XXX. F. S. Hammett, Philadelphia.—p. 29.
*Estrous Cycle in Rat. II. Effect of Thyroparathyroidectomy and Parathyroidectomy. M. O. Lee, Columbus, Ohio.—p. 43.
Vigor. VII. Fatigability of Castrated Rats. M. Gans and R. G. Hoskins, Columbus, Ohio.—p. 56.

Lipodystrophy and Hyperthyroidism.—Progressive lipodystrophy, cephalothoracic lipodystrophy, or syndrome of Barraquer-Simons (syndrome rather than a disease), appears to be a predisposition to a peculiar way of losing flesh, determined by neurovegetative factors whose nature is not known. There are cases, chiefly in women, in which this alteration is what might be called a physiologic or attenuated form. If in such predisposed cases there is an additional cause for losing weight, such cause will act as an "activator" which will accentuate the typical form of loss of flesh. Among these, in the opinion of Marañon and Soler, the most frequent is hyperthyroidism, undoubtedly because it coincides with favorable neurovegetative perturbations which determine the lipodystrophic predisposition. Cephalothoracic lipodystrophy frequently coincides with hyperthyroidism, and in every case of lipodystrophy the minor hyperthyroid symptoms should be sought and the basal metabolism be determined; also in every case of adiposis. In the lower parts the fat is normal, or at least offers a greater resistance to the loss, especially if lipomatotic formations are produced, as is frequently the case.

Thyroid, Parathyroid and Growth.—Hammett presents data bearing on the salient sex and systemic similarities and differences in growth response to thyroid and parathyroid deficiency initiated at different stages of development in the life of the albino rat, so far as growth in body weight, body length and tail length is concerned.

Thyroid, Parathyroid and Estrus.—Data presented by Lee seem to show that the effects of thyroidectomy and of parathyroidectomy on the estrual cycles seem to be additive when both operations are performed on the same animal.

Florida State Medical Association, Jacksonville

12: 223-249 (March) 1926

Treatment of Colds. M. A. Lischkoff, Pensacola.—p. 223.
Treatment of Urethral Calculus. E. S. Gilmer, Tampa.—p. 225.
Physician and Health Officer. F. A. Brink, Jacksonville.—p. 228.
Laboratory as Aid in Diagnosis. W. C. Jones, Miami.—p. 229.
Stricture of Esophagus Due to Lye Burns. J. Halton, Sarasota.—p. 234.

Georgia Medical Association Journal, Atlanta

15: 39-81 (Feb.) 1926

One Hundred Cases of Goiter. C. E. Waits and R. S. Leadingham, Atlanta.—p. 39.
Management of Head Injuries. J. C. Weaver, Atlanta.—p. 43.
Diagnostic Importance of Pyelogram in Chronic Abdominal Conditions. S. J. Sinkoe, Atlanta.—p. 48.
Dermatophytosis. J. W. Jones, Atlanta.—p. 52.
Treatment of Diabetes Mellitus. J. A. Redfearn, Albany.—p. 55.
General Anesthesia. C. A. Dexter, Columbus.—p. 60.

Illinois Medical Journal, Oak Park

49: 177-264 (March) 1926

Massage and Movements in Treatment of Fractures. W. Darrach, New York.—p. 199.
Secretaries' Conference in 1926. J. Swanberg, Quincy.—p. 202.
Biologic Sense of Beauty. E. C. Piette, Chicago.—p. 204.
Value of Nurse in School Medical Inspection. M. D. Reiseman, Chicago.—p. 205.
Meinicke Test for Syphilis by Precipitation. W. T. Mefford, Chicago.—p. 210.
Drugs We Use. W. R. Mangum, Bridgeport.—p. 211.
Diseases Simulating Pulmonary Tuberculosis. M. Lewison, Chicago.—p. 213.
Surgical Intervention in Medical Kidney Diseases. G. Kolischer and A. E. Jones, Chicago.—p. 215.
Bone Cysts: Cases. J. Ireland, Chicago.—p. 217.
Operative Treatment of Fractures. T. A. Johnson, Rockford.—p. 220.
Arteriosclerosis. B. Lemchen, Chicago.—p. 224.
Quack Curse—And Cure. H. R. Krasnow, Chicago.—p. 226.
Paralysis of Lower Extremity: Gluteal Paralysis. P. H. Kreuscher, Chicago.—p. 229.
Routine Examinations of Back and Cervical Spine. P. Lewin, Chicago.—p. 231.
Some Diagnoses of Disorders of Alimentary Tract. E. L. Heintz and R. G. Johnson, Chicago.—p. 231.
Medical Legislation. J. R. Neal, Springfield.—p. 234.
Foreign Bodies in Air and Food Passages not Casting Roentgen-Ray Shadows. E. L. Myers, St. Louis.—p. 243.
Daily Hospital Clinic for Private Patients. E. Keating, Chicago.—p. 246.
Closed Hospital. J. J. Pelock, Chicago.—p. 249.
Aural Auscultation. S. Rosenblatt, Chicago.—p. 258.

Iowa State Medical Society Journal, Des Moines

16: 101-152 (March) 1926

Diagnosis of Brain Tumor. W. E. Dandy, Baltimore.—p. 101.
Thyroid: Medical Considerations. E. G. Senty, Davenport.—p. 103.
Id. Surgical Considerations. C. J. Rowan, Iowa City.—p. 107.
Id. Radiation Considerations. T. A. Burcham, Des Moines.—p. 110.
Mendelian Law. W. W. Bowen, Fort Dodge.—p. 117.
Major Walter Reed and Yellow Fever. D. S. Fairchild, Clinton.—p. 129.

Johns Hopkins Hospital Bulletin, Baltimore

38: 163-253 (March) 1926

Relation of Sympathetic Nervous System to Skeletal Muscle Tone. F. D. Coman, Baltimore.—p. 163.
*Chloroma. D. Brannan, Pittsburgh.—p. 189.
*Interagglutination of Maternal and Fetal Blood in Late Toxemias of Pregnancy. W. M. Allen, Baltimore.—p. 217.
*Basal Metabolism in Toxemias of Pregnancy. H. J. Stander and C. H. Peckham, Baltimore.—p. 227.
Fetal Synthesis of Fats. L. G. Wesson, Baltimore.—p. 237.
*Prophylactic and Therapeutic Activity of Sodium Salt of Acetyl Oxyaminophenylarsine Acid (Stovarsol) in Experimental Syphilis of Rabbits. A. K. Poole, Baltimore.—p. 242.

Chloroma.—Seventy-three cases recorded in the literature are analyzed by Brannan and one personal case is reported. This case in most respects was typical of chloroleukemia. The patient was a young man suffering from myelogenous leukemia with gradually developing and characteristic, hard, flat cranial tumors, exophthalmos with marked visual and fundus changes, facial paralysis, impairment of hearing and symptoms confused with mastoiditis and otitis media. There was marked roentgenologic evidence of intracranial pressure and orbital and sinus growths. The leukocyte counts, which ranged from 12,000 to 39,900, were relatively low for leukemia but rather typical of chloroleukemia. The leukocytes at first were largely metamyelocytes but later mostly myeloblasts. Marked secondary anemia, with evidence of regeneration of the erythrocytes, was a characteristic feature. A very detailed postmortem examination was made.

Interagglutination of Maternal and Fetal Blood.—The isoagglutination characteristics of the bloods of 375 normal and of 104 toxemic women and their newly born infants have been studied by Allen. There was no evidence that incompatibility is more frequent in toxemic than in normal gestation. Incompatibility between the bloods of mother and infant was present in 20.8 per cent of 375 normal and 21.1 per cent of 104 toxemic pregnancies. There was no evidence of an increased titer in the maternal serum of toxemic women, nor of specific immunization of the mother against fetal corpuscles. This series of cases gives no evidence that the late toxemias of pregnancy have their origin in iso-agglutination phenomena.

Basal Metabolism in Toxemias of Pregnancy.—Stander and Peckham failed to find basal metabolism determinations of any real help in differentiating between the various types of toxemias in late pregnancy. In normal pregnancy, as well as in the different toxemias of pregnancy, there is some factor or factors, which result in an elevated basal metabolic rate as term is approached, a gradual return to normal ensuing during the puerperium. It is probable that such a factor, or factors, may have to do with the growing product of conception, as well as a slight increased activity of the thyroid gland.

Stovarsol in Experimental Syphilis.—The sodium salt of acetyl oxyaminophenylarsine acid, given by mouth in a single dose of 0.5 Gm. per kilogram, Poole says, appears to exert a definite prophylactic action in experimental syphilis of the rabbit. In the same dosage, it apparently can bring about the healing of the initial syphilitic orchitis. The drug is toxic for rabbits in single doses as low as 0.2 Gm. per kilogram, when administered by mouth, causing death of the

animal within twenty-seven days or less. Further experimental study of the drug is advised by Poole before it is employed in human syphilis.

Journal of Biological Chemistry, Baltimore

47: 351-545 (Feb.) 1926

Preparation of *d*-Arginine Carbonate. A. E. Pratt, Ann Arbor, Mich. —p. 351.
Determination of Sugar in Blood and in Normal Urine. O. Folin, Boston.—p. 357.
Dietary Factors Influencing Calcium Assimilation. VII. Influence of Sunlight on Calcium Equilibrium in Milking Cows. E. B. Hart, H. Steenbock, C. A. Elvehjem, C. A. Scott and G. C. Humphrey, Madison, Wis.—p. 371.
Fate of Acid in Body. C. H. Fiske, R. A. Goodell, L. E. Hathaway, Jr., and E. J. West, Boston.—p. 385.
*Clinical Calorimetry. XL. Effect of Absence of Sweat Glands on Elimination of Water from Skin and Lungs. H. B. Richardson, New York. —p. 397.
Antirachitic Value of Irradiated Cholesterol and Phytosterol. V. Chemical and Biologic Changes. A. F. Hess, M. Weinstock and E. Sherman, New York.—p. 413.
New Method for Identification and Estimation of Cholesterol and Certain Other Compounds. J. V. Steinle and L. Kahlenberg, Madison, Wis.—p. 425.
Comparative Metabolism of Certain Aromatic Acids. VIII. Acetylation of Amino Compounds. J. B. Muenzen, L. R. Cerecedo and C. P. Sherwin, New York.—p. 469.
Benzoic Acid Conjugation in Dog with Direct Quantitative Method for Hippuric Acid. A. J. Quick, Philadelphia.—p. 477.
Basal Metabolism of Girls. K. Blunt, J. Tilt, L. McLaughlin and K. B. Gunn, Chicago.—p. 491.
Effect of Sleep on Urinary Chlorides and p_H. G. E. Simpson, Montreal. —p. 505.
Iron Content of Meats. E. B. Forbes and R. W. Swift, State College, Penn.—p. 517.
Studies on Synthesis and Elimination of Certain Bile Components in Obstructive Jaundice. J. L. Brakefield and C. L. A. Schmidt, Berkeley, Calif.—p. 523.

Function of Sweat Glands.—An individual in whom the absence of sweat glands had been demonstrated by microscopic examination was studied by Richardson with reference to the elimination of heat and water vapor. The study of this patient confirms the theory that the sweat glands constitute an emergency apparatus which is called on only under exceptional conditions.

Journal of Industrial Hygiene, Boston

8: 89-142 (March) 1926

*Treatment of Accidental Wounds. R. J. DeMotte, Chicago.—p. 89.
Researches in Mental Hygiene in Industry. IV. Psychiatric Case Studies in Department Store and Factory. H. B. Elkind, Boston.—p. 94.
Health Hazards in Rubber Industry. R. S. Quinby, Watertown, Mass. —p. 103.
Lead Poisoning Among Oxyacetylene Welders in Scrapping of Naval Vessels. E. W. Brown, Edgewood, Md.—p. 113.

Treatment of Accidental Wounds.—The treatment advocated by DeMotte consists in assisting nature to heal, and refraining from the use of antiseptics, as they really have little value in these cases. Nature prevents infection mechanically by hemorrhage, chemically by antisepsis, and biologically by phagocytosis. Blood washes out the wound, carrying away a certain amount of foreign matter, including bacteria. The blood contains certain antibodies which act as chemical antiseptics and kill bacteria, and leukocytes which engulf and digest them. Nature repairs a wound by bathing the injured tissues with serum which contains cell food, and leukocytes which digest and absorb badly damaged tissue. On this basis the treatment employed is as follows: (1) Thorough cleansing of the surrounding skin; (2) trimming away of overhanging, ragged skin margins; (3) gentle, but thorough sponging out of the wound, removing blood clots and foreign matter; (4) trimming away of all badly damaged tissue in the depth of the wound. This opens all capillaries and tissue spaces for the flow of serum. (5) Drainage strip, if needed; (6) closure with judgment by adhesive strips or sutures; (7) moist dressings, if needed; (8) continuous moist heat in the more extensive wounds. If wounds are handled in this manner, Nature will disinfect them in forty-eight hours and healing will occur with a minimum of scar tissue.

Journal of Laboratory and Clinical Medicine, St. Louis

11: 503-599 (March) 1926

*Methods of Staining Tubercle Bacilli. H. J. Corper, Denver.—p. 503.
*Reactions of Typhoid Vaccination. H. J. Nichols and P. Hitchens, Washington, D. C.—p. 517.
Blood Counts in Mississippi. L. S. Lippincott, Vicksburg, Miss.—p. 524.
Chemical Investigations on Neo-Arsphenamine. I. Methods of Analysis. L. Freedman, Brooklyn, N. Y.—p. 528.
*Influence of Magnesium Sulphate on Expulsion of Bile from Gallbladder. W. H. Ganit, Baltimore and G. v. Volborth, Petrograd.—p. 542.
*Variations in Blood Sugar Content Following Administration of Insulin. H. J. John, Cleveland.—p. 548.
*Problem in Insulin Therapy. W. J. Mallory and J. D. Roe, Washington, D. C.—p. 560.
Blood Gas Analyzer. C. C. Guthrie, Pittsburgh.—p. 565.
Basic Fuchsin for Endo Mediums. R. W. French, Washington, D. C. —p. 571.
New Hemoglobin Scale. C. E. Roderick, Battle Creek, Mich.—p. 573.
Aniline as Decolorizing Agent in Gram Stain. H. A. Kemp and M. S. Fleisher, St. Louis.—p. 575.
Paraffin Rings on Microscopic Slides. G. Green, Cambridge, Ohio.— p. 577.
Destruction by Heating of Complement in Human Serum. R. A. Kilduffe, Atlantic City, N. J.—p. 578.
Gassing Chamber for Short Exposures. D. C. Walton and C. A. Jones, Edgewood, Md.—p. 580.

Staining Tubercle Bacilli.—An examination made by Corper of twenty sputums containing tubercle bacilli by thirteen different methods revealed that when the technic is properly performed the majority of these methods may result in staining the tubercle bacilli in the sputums with equal efficiency. There was, however, a decided difference in the ease of performance, speed and simplicity of the various individual methods. Sixteen different positive smears consecutively stained and restained (after destaining) by nine different methods emphasized further the importance of technic in the staining of tubercle bacilli. For practical purposes the simple, steaming, carbolfuchsin (Ziehl-Neelsen) method, or one of its modifications, is recommended. The choice of colors remains with the individual operator, since any number of dye combinations can be used for staining and counterstaining the tubercle bacilli. A negative finding by the method requires for further elaboration animal (guinea-pig) inoculation. In view of the danger of technical errors and in order to raise the present efficiency of the technic, especially with otherwise negative findings or when only single specimens are available, it is recommended that each specimen tested for tubercle bacilli by staining methods be controlled by the coincident staining of a like preparation to which a standard suspension of tubercle bacilli, which can easily be kept available in the laboratory at all times, has been added.

Reactions of Typhoid Vaccination.—Nichols and Hitchens assert that recent advances in dealing with antitoxic immunity as seen in diphtheria and scarlet fever have not been duplicated in regard to bacterial immunity as seen in typhoid fever. It is not possible at present to detect susceptibles and immunes to typhoid by skin or other tests.

Influence of Magnesium Sulphate on Bile Expulsion.—Ganit and Volborth found absolutely no influence of magnesium sulphate on the expulsion of bile into the duodenum.

Variations in Blood Sugar Caused by Insulin.—John asserts that the amount of insulin administered intravenously appears to bear no regular relation to the fall of blood sugar. While the administration of insulin usually produces a decrease in the blood sugar, in some instances it is followed by an increase which may or may not be related to postprandial hyperglycemia. In general, whatever the primary effect of insulin, repeated doses result in a decrease in the blood sugar; this apparently cumulative effect, however, is independent of the size of the doses. The level of blood sugar per se is not a criterion of the probability that a reaction will follow the administration of insulin. Thus, a large dose of insulin may be given in the presence of hypoglycemia without any resultant reaction; and, in another case, a reaction may occur in the presence of a marked hyperglycemia.

Problems in Insulin Therapy.—Mallory and Roe insist that in a patient apparently not responding to increasing doses of insulin by a proportionate decrease in sugar excretion and reduction of the blood sugar level, the time relation of sugar excretion to insulin dosage should be investigated. The simplest method is the examination of three-hour portions of urine. Frequent blood sugar determinations give additional information. The remedy is the redistribution of insulin in amount and at the time when required.

Journal of Medical Association of Georgia, Atlanta

15: 81-124 (March) 1926

Adhesive Mediastino-Pericarditis. E. E. Murphy, Augusta.—p. 81.
Treatment of Pneumonia. E. C. Thrash, Atlanta.—p. 86.
Dextrose Content of Cerebrospinal Fluid in Certain Nervous and Mental Diseases. E. B. Saye, Milledgeville.—p. 92.

Kansas Medical Society Journal, Topeka

26: 71-104 (March) 1926

Malignant Cystic Ovarian Tumors. J. L. Grove, Newton.—p. 71.
Radiographic Diagnosis of Early Pulmonary Tuberculosis. R. G. Breuer, Norton.—p. 75.
Evolution of Science. S. G. Stephenson, Topeka.—p. 82.
Relation of Clinician to Laboratory. A. S. Welch, Kansas City, Mo. —p. 85.

Kentucky Medical Journal, Bowling Green

25: 117-160 (March) 1926

Ulcer of Cornea. M. C. Baker, Louisville.—p. 121.
Temporosphenoidal Abscess: Case. H. G. Reynolds and J. D. Abell, Paducah.—p. 124.
Local Anesthesia in Eye, Ear, Nose and Throat Surgery. J. J. Wynn, Louisville.—p. 127.
Delirium Following Cataract Operations. F. C. Thomas, Lexington.—p. 134.
Empyema of Frontal Sinus: Case. D. M. Griffith, Owensboro.—p. 143.
General Anesthesia in Eye, Ear, Nose and Throat Surgery. W. H. Long, Louisville.—p. 146.
Surgical Treatment of Peptic Ulcer. F. W. Rankin, Lexington.—p. 152.
Cervical Carcinoma in Patient Twenty-Six. L. W. Frank, Louisville. —p. 156.

Medical Journal and Record, New York

123: 345-412 (March 17) 1926

Cancer: Causes and Control. J. Young, Edinburgh.—p. 345.
Mouth Infections. J. L. T. Appleton, Philadelphia.—p. 351.
Inheritance and Medicolegal Application of Blood Group. J. A. Buchanan, Brooklyn.—p. 354.
Enuresis. M. K. Wylder, Albuquerque, N. M.—p. 358.
Diminishing Number of Doctors in Rural Districts. C. L. Larkin, Waterbury, Conn.—p. 360.
Epidemiology of Scarlet Fever. D. M. Lewis, New Haven, Conn.—p. 361.
Treatment of Constricture at Neck of Bladder. M. B. Saunders, Waco, Texas.—p. 364.
Extravasation of Urine. F. Greenburg, New York.—p. 366.
Treatment of Hypertonus and Arteriosclerosis. S. E. Witt, New York. —p. 369.
Etiology of Eczema. F. C. Combes, Jr., New York.—p. 371.
Endogenic Nature of Some Skin Diseases. G. Singer, Vienna.—p. 374.
Response of Skin to Systemic Affections. S. Gordon, Philadelphia.—p. 375.
Trichophytosis of Glabrous Skin. M. Scholtz, Los Angeles.—p. 379.
Dermatomyositis. E. D. Friedman, New York.—p. 382.

Medicine, Baltimore

5: 1-78 (Feb.) 1926

Parathyroid Glands. J. B. Collip, Edmonton, Canada.—p. 1.
Present Knowledge of Filtrable Viruses. W. G. MacCallum, Baltimore. —p. 59.

Michigan State Medical Society Journal, Grand Rapids

25: 114-170 (March) 1926

Intravenous Therapy in Acute Infections and Infectious Diseases. H. H. Young, Baltimore.—p. 114.
Pneumonia: Prophylaxis and Therapeutics. F. T. Lord, Boston.—p. 120.
Contact of Surgeon with Problem of Cancer. G. W. Crile, Cleveland. —p. 124.
Problem of Malignant Disease as Met by Internist. S. Strouse, Chicago. —p. 128.
Primary and Metastatic Cancer of Head. H. L. Pollack, Chicago.—p. 131.
Radiation Therapy in Cancer. H. P. Doub, Detroit.—p. 134.
Postoperative Pulmonary Complications. E. D. Rothman, Detroit.—p. 140.
Case of Masochism. W. F. Martin, Battle Creek.—p. 146.

Minnesota Medicine, St. Paul

9: 105-150 (March) 1926

Intestinal Tuberculosis. F. L. Jennings and E. Fenger, Oak Terrace.—p. 105.
Indications for Artificial Pneumothorax. R. M. Mattill and M. H. Wall, Oak Terrace.—p. 108.
Differential Diagnosis of Pulmonary Tuberculosis. H. S. Boquist, Oak Terrace.—p. 110.
Heliotherapy in Tuberculosis. J. H. Bendes, Oak Terrace.—p. 112.
*Pleurisy. D. R. Hastings, Oak Terrace.—p. 114.
Glen Lake Sanatorium. E. S. Mariette, Oak Terrace.—p. 116.
*Flocculation in Tuberculosis. W. L. Hardesty, Oak Terrace.—p. 119.
*Diet in Treatment and Prevention of Tuberculosis. J. A. Myers, Minneapolis.—p. 121.
Tonsillectomy in Tuberculosis. H. Newhart, Minneapolis.—p. 124.
*Thoracoplasty in Tuberculosis. A. A. Law, Minneapolis.—p. 126.
Prognosis of Tuberculosis in Infancy and Childhood. F. W. Schlutz, Minneapolis.—p. 127.
Tuberculosis and Pregnancy. J. C. Litzenberg, Minneapolis.—p. 129.
Tuberculosis of Oral Cavity. C. W. Waldron, Minneapolis.—p. 131.

Pleurisy and Tuberculosis.—Of 1,182 patients with tuberculosis, whose histories were reviewed by Hastings, fibrinous pleurisy and pleurisy with effusion occurred in 55.7 per cent. Hastings feels that this means that fibrinous pleurisy may be the first symptom of pulmonary tuberculosis; hence, patients with fibrinous pleurisy should be warned that they may have tuberculosis.

Flocculation in Tuberculosis.—Hardesty prefers the Baum technic. He has carried out the reaction in 300 cases, comprising patients and employees of a sanatorium, and guinea-pigs, healthy and diseased. Strongly positive reactions have occurred only in tuberculosis. The intensity of the reaction is roughly proportional to the extent and activity of the process. Weak positives are occasionally found in those with mild tuberculous infection and in individuals presumably healthy. Negative reactions occurred only once in active tuberculosis. Thus, it would seem that one great value of the reaction consists in its power to differentiate between active tuberculosis in which the bacilli are not found, and other diseases which clinically simulate it.

Diet in Tuberculosis.—Myers urges that the diet of the tuberculous patient must be prescribed by the physician, just as drugs are prescribed in certain other diseases. He objects to forced feeding and stresses the importance of meeting the vitamin requirement of the body.

Thoracoplasty in Tuberculosis.—Law has done fifty-eight operations on thirty-one patients and has lost only one directly from the operation. This was a one-stage operation, and the man died of shock. In all cases he has used local nerve block with procaine supplemented by nitrous oxide gas and oxygen analgesia.

Nebraska State Medical Journal, Norfolk

11: 89-128 (March) 1926

Practical Management of Some Types of Acute Intestinal Obstruction. J. E. Summers, Omaha.—p. 89.
Urgent Surgery of Abdomen. J. W. Duncan, Omaha.—p. 93.
Leverage and Levers in Reduction of Fractures. J. E. M. Thomson, Lincoln.—p. 98.
Modern Aspects of Nutrition: Pathology of Malnutrition. V. E. Levine, Omaha.—p. 100.
Application of Business Principles to Practice of Medicine. C. C. Johnson, Lincoln.—p. 109.
Chronic Nonsuppurative Arthritis. M. J. Breurer, Lincoln.—p. 112.
What People Think of Us and Why. G. O. Remy, Ainsworth.—p. 115.

New Jersey State Medical Society Journal, Orange

23: 109-154 (March) 1926

Scarlet Fever: Prevention and Cure. A. Zingher, New York.—p. 100.
Angina Pectoris. G. M. Piersol, Philadelphia.—p. 117.
Calculus of Kidney and Ureter: Thirty-Four Cases. L. R. Kaufman. —p. 124.
Diabetes Mellitus in Infancy: Case. G. Ginsberg.—p. 129.

New Orleans Medical and Surgical Journal

78: 557-650 (March) 1926

Milk Injections for Pelvic Infections in Women. G. Gellhorn, St. Louis. —p. 557.
Conservative Treatment of Puerperal Infection. C. J. Miller, New Orleans.—p. 565.
Doctor's Responsibility to Motherhood. R. M. Adams, Tupelo, Miss.—p. 569.
Indications for Intraspinal Treatment of Syphilis. C. S. Holbrook, New Orleans.—p. 574.
Syphilis and Surgical Conditions. A. G. Payne, Greenville, Miss.—p. 582.
Traumatic and Simultaneous Dislocation of Shoulder Joints. A. P. Heineck, Chicago.—p. 586.
Tuberculosis in General Hospital. I. L. Robbins, New Orleans.—p. 594.
Important Relationship of Postmortem Examinations to Clinical Medicine. A. B. Friedrichs, New Orleans.—p. 604.
Sacral and Parasacral Anesthesia. E. H. Galloway, Jackson, Miss.—p. 608.
Splenectomy in Certain Types of Anemia. A. Street, Vicksburg, Miss. —p. 611.
Acute Rhinitis and Pharyngitis. J. S. Ullman, Natchez, Miss.—p. 614.
Treatment of Failing Heart. T. D. Bourdeaux, Meridian, Miss.—p. 620.

New York State Journal of Medicine, New York

26: 225-922 (March 15) 1926

*Lymphatic Drainage. W. A. Costain, Toronto.—p. 225.
Polycystic Disease of Kidneys: Six Cases. J. Schwartz, New York.—p. 231.

Shortened Hospitalization for Diabetic Patients. H. N. Cooper, Watertown.—p. 237.
*Botulism: Case. A. G. Foord and A. E. Forsyth, Buffalo.—p. 239.
Intimations of Public Health in Early New York. D. B. Armstrong, New York.—p. 241.
*Treatment of Laryngeal Tuberculosis. R. S. Moore, Syracuse.—p. 247.

Lymphatic Drainage.—The operation of draining the thoracic duct in the neck is a surgical procedure which is designed to overcome the septic absorption which occurs in diffuse peritonitis. The operation is described in detail by Costain, and sixteen cases are reported. The mortality rate of these cases has been reduced from 30 to 40 per cent.

Botulism.—A case of botulism, fatal in five days, due to eating home canned string beans, is presented by Foord and Forsyth. *Bacillus botulinus*, type B, was recovered in pure culture from the spoiled beans, and from the intestinal content of the patient at necropsy. Toxin production by the organism was vigorous. Chickens were immune to enormous doses of the same, whereas guinea-pigs and rabbits were highly susceptible. Heating the toxin in boiling water for five minutes destroyed it completely. Pathologic findings were characteristic of botulism in the patient as well as in the animals.

Laryngeal Tuberculosis.—Moore pleads for a more systematic study of the larynx in all cases of tuberculosis, followed by an examination at least once each month.

Oklahoma State Medical Association Journal, Muskogee

19: 59-82 (March) 1926

Oklahoma Flora: Hay-Fever. R. M. Balyeat, Oklahoma City.—p. 59.
Injuries to Small Bones of Hand and Wrist. F. Y. Cronk, Tulsa.—p. 64.
Wrist Joint Injuries. E. McBride, Oklahoma City.—p. 67.
Rectal Analgesia Combined with Ethylene Oxygen in Obstetrics. C. E. White, Muskogee.—p. 70.
Correlation of Surgery and Radiotherapy. M. M. Roland, Oklahoma City.—p. 71.

Philippine Journal of Science, Manila

29: 1-304 (Jan.-Feb.) 1926

Dengue. J. F. Siler, M. W. Hall and A. P. Hitchens.—p. 1.

Public Health Journal, Toronto

17: 101-150 (March) 1926

Immunization Against Scarlet Fever. R. George.—p. 101.
Venereal Diseases. J. E. Campbell.—p. 106.
*New Haven Demonstration of Community Control of Rickets. M. M. Eliot.—p. 114.
Hieronymus Fracastorius de Contagionibus, Morbisque Contagiosis et Eorum Curatione, Libri Tres. W. R. Riddell.—p. 117.
Social Hygiene and Health Officer. D. V. Currey, St. Catherines.—p. 125.
Annual Rest Periods. B. Merson.—p. 127.
Relation of Social Settlement to Community Life. G. T. Fergusson.—p. 129.

Community Control of Rickets.—The New Haven demonstration was undertaken to show that 90 per cent of the babies seen showed the evidences of slight rickets by roentgen-ray examination before they were 6 months of age. When the directions regarding cod liver oil and sunbaths were followed regularly, these babies did not develop the slightest evidence of rickets; that is, the disease was controlled. In contrast to this group stand the control series which showed 18 per cent of moderate or marked rickets at 10 months, 25 per cent at 13 months, and 37 per cent at 25 months of age. In the temperate zone, rickets is a nearly universal disease among infants, whether breast fed or artificially fed. If prevention is to be brought about, Eliot says, antirachitic treatment should be begun in the first month of life and continued faithfully throughout two years.

Physical Therapeutics, Baltimore

44: 67-130 (Feb.) 1926

Fractional High Voltage Roentgen-Ray Radiation Technic in Inoperable Malignant Lesions. W. L. Clark, Philadelphia.—p. 67.
Dangers of Roentgen Ray. S. Tousey, New York.—p. 77.
Physical Measures for Joint Diseases. J. W. Travell, New York.—p. 87.
Diagnosis and Physical Therapy in Painful Shoulder Conditions. R. Kovacs, New York.—p. 90.

South Carolina Medical Journal, Greenville

22: 51-78 (March) 1926

Transfusion of Blood. J. McLeod, Florence.—p. 57.
Intussusception in Children and Operation to Replace Resection in Late Cases. G. H. Bunch, Columbia.—p. 61.
Five Thousand Nonsurgical Drainages of Biliary Tract. G. M. Niles, Atlanta, Ga.—p. 64.
Intracranial Hemorrhage of New-Born. W. E. Simpson, Rock Hill.—p. 65.
Splenomegaly. S. O. Black, Spartanburg.—p. 69.
Mental Hygiene of Childhood. R. G. Beachley, Spartanburg.—p. 70.

Surgery, Gynecology and Obstetrics, Chicago

42: 305-444 (March) 1926

Suppurative Diseases of Lung Due to Inspirated Foreign Body Contrasted with Those of Other Etiology. C. Jackson, Philadelphia.—p.305.
*Mortality in Important Surgical Diseases, Especially Appendicitis. A. M. Willis, Richmond, Va.—p. 318.
*Intrahepatic Cholelithiasis. E. S. Judd and V. G. Burden, Rochester, Minn.—p. 322.
*New Method of Demonstrating Median Nerve Lesions. D. Crile, Chicago.—p. 325.
*Splenectomy as Therapeutic Measure in Thrombocytopenic Purpura Hemorrhagica. A. O. Whipple, New York.—p. 329.
*Nephritis in Pregnancy. R. Rockwood, R. D. Mussey and N. M. Keith, Rochester, Minn.—p. 342.
Volvulus of Cecum: Case Complicating Typhoid. H. F. Graham, Brooklyn.—p. 351.
*Cancer of Umbilicus Secondary to Cancer of Cecum. J. R. Head, Madison, Wis.—p. 356.
Chondrodysplasia. W. H. Cole, St. Paul.—p. 359.
*Varix of Superficial Epigastric Vein Simulating Femoral Hernia. W. Hughson, Baltimore.—p. 366.
Surgical Management of Acute Abdomen. W. M. Thompson, Chicago.—p. 368.
*Nonspecific Antigenic Effect of Spermatozoa on Fertility. S. J. Fogelson, Chicago.—p. 374.
*Acute Hemorrhagic Pancreatitis. E. Butler and C. D. Delprat, San Francisco.—p. 379.
Registry of Bone Sarcoma. E. A. Codman, Boston.—p. 381.
*Staphylococcus Meningitis Secondary to Congenital Sacral Sinus. T. S. Moise, New Haven.—p. 394.
*Hernia in Broad Ligament. L. Dunn, Minneapolis.—p. 398.
*Method of Partial Gastrectomy with Telescopic Anastomosis. W. W. Babcock, Philadelphia.—p. 403.
Kineplastic Amputations: Arm-Bimotor and Prosthesis. G. B. Arana, Buenos Aires.—p. 416.
Subastragaloid Arthrodesis in Treatment of Old Fractures of Calcaneus. R. S. Reich, Cleveland.—p. 420.
Operation for Incontinence of Urine Following Perineal Prostatectomy. E. L. Keyes, New York.—p. 423.
Technic for Roentgen-Ray Diagnosis of Clavicle Fractures. F. Quesada, Lima, Peru.—p. 424.
*Anastomosis of Veins. C. E. Bird, New Haven, Conn.—p. 428.

Surgical Disease Mortality.—Data obtained by Willis from the Bureau of Vital Statistics show that the number of deaths per hundred thousand from gallstones increased 77 per cent since 1901; the mortality rate from gastro-intestinal ulcer has increased 72 per cent; that from appendicitis almost 31 per cent, while the mortality rate accompanying thyroid disease increased more than 250 per cent. Willis believes that standardization of the methods of treatment of these diseases will effect a material reduction of these mortality rates.

Intrahepatic Cholelithiasis.—The unique features in the case reported by Judd and Burden are: The finding of many large intrahepatic calculi in a liver that was grossly normal, more than eleven years after cholecystectomy, and removal of numerous stones from the extrahepatic ducts; and the presence of this condition without the occurrence of jaundice or any clinical evidence of hepatic insufficiency, the condition being an incidental finding in a patient who died from intestinal obstruction.

Demonstration of Median Nerve Lesions.—The sign described by Crile presents the means of delineating in a graphic manner cutaneous areas, the nerve supply of which is blocked. It was first noted in a case of malunion of a fracture of the lower end of the radius and ulna with complete sensory paralysis of the median nerve area in the hand. As part of the treatment, Bier's hyperemia was employed. The patient noticed that after the hyperemia had been established for two or three minutes, the hand assumed a peculiar appearance. The thumb and first two fingers and the radial side of the ring finger gradually became cyanosed and tense, the color extending over the thenar eminence and outlining the sensory distribution of the median nerve. The rest of the ring finger and the little finger and the remaining area of the palm became a mottled red. As long as pressure was maintained, the appearance of the hand remained unaltered; when the pressure was removed, the hand gradually assumed

its normal color. This phenomenon became less marked in degree and extent as the nerve function returned. After six weeks, sensation had returned to the palm, and the area of color change had decreased correspondingly. Ten weeks later the color phenomenon could still be elicited, but there was no remaining evidence of median nerve paralysis except anesthesia over the tips of the thumb, index and middle fingers.

Splenectomy for Purpura Hemorrhagica. — Eighty-one reported cases of splenectomy for thrombocytopenic purpura hemorrhagica are reviewed by Whipple, including four personal cases. He is convinced that this operation has contributed the greatest advance to the therapy of the purpuras, but it must be remembered that the favorable results are largely limited to the chronic variety. Furthermore, patients after splenectomy should be cautioned and guarded against infections, in order to obtain the best results.

Nephritis in Pregnancy.—Many of the toxemias of pregnancy are associated with nephritis and can be classified as are other types of nephritis, not necessarily occurring in pregnancy. The classification of Volhard and Fahr is followed by Rockwood et al. The course of fifty-seven cases occurring during pregnancy is followed, together with the fate of the mother and child, over a period of three years. Both nephritis and toxemia of pregnancy seem to be general diseases affecting the cardiorenal vascular system as a whole. When the toxemia of pregnancy is classified by the same method that Volhard uses for nephritis, a marked difference in the end-results is seen and this difference allows the physician to make a more accurate prognosis, both as to the mortality among the mothers and as to the fate of the child in subsequent pregnancies.

Secondary Cancer of Umbilicus.—Besides reporting one case of cancer of the umbilicus secondary to adenocarcinoma of the cecum Head presents a clinical and pathologic summary of 101 instances of carcinoma of the umbilicus which have appeared in the literature.

Varix of Superficial Epigastric Vein.—A varix of the superficial epigastric vein is reported by Hughson. The usual diagnostic signs were absent, possibly accounting for the erroneous clinical diagnosis of femoral hernia.

Antigenic Effect of Spermatozoa. — Fogelson's results confirm the work of others. It is evident that there is an accurate method of temporarily inhibiting conception by sensitization of the female rat to any spermatozoa protein. This antigenic effect of spermatozoa is not specific for species, but equally good results can be obtained from the spermatozoa of any species. The mechanism causing this sterility is still not clear.

Acute Hemorrhagic Pancreatitis. — Butler and Delprat report an early case of acute hemorrhagic pancreatitis. As the pathologic changes were localized definitely to the tail of the pancreas, resection seemed the logical procedure. The patient made a complete recovery.

Secondary Staphylococcus Meningitis.—The case reported by Moise showed a congenital sacral sinus with an underlying spina bifida and a direct connection between the skin and the spinal canal. The occurrence in this case of a pilonidal sinus with an underlying spina bifida and an irregularity in the fusion of the sacral vertebrae is additional evidence in favor of the view that such sinuses are developmental anomalies resulting from a failure of the medullary canal to become completely obliterated. This lesion had given the patient no cause for worry until the eighteenth year of his life, when it served as the portal of entry for a meningeal infection. A sacral laminectomy with drainage was performed with subsequent recovery from the meningitis.

Hernia in Broad Ligament.—Dunn reports one case and gives a résumé of four cases recorded in the literature.

Partial Gastrectomy with Telescopic Anastomosis.—Instead of making an end-to-end junction of stomach and duodenum, Babcock turns the duodenum into the open end of the gastric mucous membrane and the outer end of the gastric stump after a high resection of the gastric mucous membrane and the outer serous surface of the duodenum is united to the inner surface of the denuded muscularis of the stomach. The entire thickness of the cut end of the duodenum is united to the gastric mucosa. The telescopic union is said to have the advantage of strength, reinforcement and mechanical adaptation. The depth of invagination is from 2 to 6 cm., and varies with the available length of the duodenal stump, and the amount of stomach resected.

Anastomosis of Veins.—A method is described by Bird for anastomosing veins. No special instruments are necessary and the procedure may be carried out rapidly under direct vision with assurance of a successful outcome. A large, oval opening is provided.

Tennessee State Medical Association Journal, Nashville

28: 249-280 (Jan.) 1926

Abdominal Pain. B. Gaston, Lebanon.—p. 249.
Epidemic of Acute Pleurodynia in Tennessee. R. B. Wood, Knoxville. —p. 255.
Acute Delirium. C. Deaderick, Knoxville.—p. 259.
End-Results of Tonsillectomies and Andenoidectomies. D. H. Anthony, Memphis.—p. 261.
Sacral Anesthesia. W. Yeiser, Columbia.—p. 266.
Element of Time: Importance in Surgical Procedure of Seriously Injured and Seriously Sick. W. B. Burns, Memphis.—p. 270.
Amputations in Industrial Surgery. W. S. Anderson, Memphis.—p. 272.

Texas State Journal of Medicine, Fort Worth

21: 633-690 (March) 1926

Physical Education in Schools in Relation to Medical Profession. B. A. McGlachlin, Port Arthur.—p. 646.
Dental Infections and Tuberculosis. C. C. Browning, Los Angeles.—p. 650.
Municipal Sanitation. R. Hasskarl, Brenham.—p. 652.
Control of Communicable Diseases from Health Officer's View. L. H. Martin, Austin.—p. 655.
Nasopharyngeal Fibroma. A. F. Clark, San Antonio.—p. 658.
Prolapse of Rectum. J. W. Nixon, San Antonio.—p. 660.
*Venoclysis or Intravenous Nutrition. G. A. Hendon, Louisville, Ky.—p. 662.
Treatment of Acute Brain Injuries. C. C. Nash, Dallas.—p. 666.
Burns. I. E. Colgin, Waco.—p. 668.
Intracranial Hemorrhage in New-Born. E. Davis, Fort Worth.—p. 670.
*Treatment of Puerperal Sepsis. H. R. Robinson, Galveston.—p. 675.

Venoclysis.—Venoclysis has been resorted to by Hendon in the following conditions: virulent pelvic infection of a tubo-ovarian abscess and plastic work on the cervix and vagina; intestinal paresis following delayed operation for obstruction; emesis gravidarum; uremia; ruptured bowel and virulent puerperal infection following operation. In each instance, the use of venoclysis was begun after the usual remedies had been tried and had failed and the patient's condition seemed hopeless; hence, the mortality was necessarily high, but not discouraging.

Use of Mercurochrome in Puerperal Infection.—Robinson concludes that, from all reports so far, it is not possible to state that mercurochrome-220 soluble is a specific cure for blood stream infections. Robinson reports five cases in which a 1 per cent solution of mercurochrome was injected intravenously in 20 cc. doses.

West Virginia Medical Journal, Charleston

22: 113-168 (March) 1926

Prolongation of Life. C. Pope, Louisville, Ky.—p. 113.
Hysteria. C. H. Maxwell, Morgantown.—p. 120.
Treatment of Eclampsia. B. S. Clements, Matoaka.—p. 128.
Chlorine in Treatment of Respiratory Infections. C. R. Kessel, Morgantown.—p. 130.
Surgery of Thyroid. R. P. Bay, Baltimore.—p. 134.
Medical Aspects of Thyroid Diseases. D. A. Tucker, Cincinnati.—p. 130.
Gallbladder Disease. J. E. Cannady, Charleston.—p. 142.

Wisconsin Medical Journal, Milwaukee

25: 107-162 (March) 1926

Physiologic Aspects of Anemias. C. D. Leake, Madison.—p. 107.
Clinical Aspects of Anemias. G. O. Broun, St. Louis.—p. 112.
Anemia as Factor in Internal Diseases. W. J. Egan, Milwaukee.—p. 117.
Blood Transfusion in Puerperal Infections. R. E. Morter, Milwaukee. —p. 119.
Significance and Treatment of Anemia in Surgical Patients. F. Raine, Milwaukee.—p. 121.
Preservation of Blood for Transfusion. M. C. Perry, Milwaukee.—p. 123.
Corrective Calisthenics for Gymnastic and Posture Classes: Klapp's System of Creeping Exercises. E. L. Seiler, Kenosha.—p. 130.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Bristol Medico-Chirurgical Journal

43: 1-72 (Spring) 1926

Etiology of Cardiac Disease. C. F. Coombs.—p. 1.
Suprarenal Virilism. E. Fawcett, G. Hadfield and P. Philips.—p. 20.
Ocular Signs of Migraine. E. R. Chambers.—p. 29.

British Journal of Children's Diseases, London

23: 1-86 (Jan.-March) 1926

Development of Speech in Normal Child. M. Yearsley.—p. 1.
*Chronic Abdominal Pain in Children. K. U. Toverud.—p. 22.
Goiter in Children. H. L. Cronk.—p. 32.
Pneumothorax in Young Children: Case. A. Moncrieff.—p. 37.
*Palpable Arterial Coats in Children. A. E. Vipond.—p. 43.
Measles Complicated by Gangrene of Legs. D. J. Hishon.—p. 47.

Chronic Abdominal Pain in Children.—Toverud points out that chronic constipation will in some children sooner or later give rise to a picture that may suggest a severe disease. Recurrent abdominal pain is the most predominant feature of this condition besides general malaise. The condition covers mostly what in different pediatric textbooks has been described under the name of "colitis," "chronic gastric catarrh" or "intestinal colic." In Toverud's experience the cause seems mostly to be poor food and the child's bad habits. A change in the food to the so-called constipation diet (much fruit, vegetables, lactic acid milk and whole meal bread) and a change in the child's habits have been able to cure these children completely.

Palpable Arterial Coats in Children.—Vipond reports cases of arterial thickening in children. This condition is a familial one, and nonsyphilitic in origin. This arterial thickening is found in very young children; in fact, it is a congenital condition, and these children enter this world with a thickening of the whole of the arterial system. This must not be confounded with arterial diseases caused by congenital syphilis. It is a familial condition, and most of the children in the family have thickened arterial coats. The thickened condition of the arterial walls can readily be detected, and the artery can be felt to roll under the finger. When examining these little patients, one must make very gentle pressure with the finger tips. Whenever a child is thin and below the normal size, Vipond says it is well to look for palpable arterial coats.

British Journal of Medical Psychology, London

6: 1-83 (March 9) 1926

Moral Imbecility. I. A. F. Tredgold.—p. 1.
Id. II. C. Burt.—p. 10.
Id. III. M. H. Smith.—p. 47.
Id. IV. W. R. Thomas.—p. 55.
Id. V. F. C. Shrubsall.—p. 70.

British Journal of Ophthalmology, London

10: 113-176 (March) 1926

Roman Oculist Stamps in Britain. R. R. James.—p. 113.
Anophthalmus Congenitus in Puppy. H. Woollard.—p. 131.
Result of Treatment by Artificial Light on Phlyctenular and Other Tuberculous Lesions of Eye. A. B. Nutt.—p. 138.
Slit Lamp. M. S. Mayou.—p. 144.

British Medical Journal, London

1: 555-602 (March 27) 1926

Treatment of Exophthalmic Goiter. I. General Management. F. R. Fraser.—p. 555.
Id. II. Surgical Treatment. T. P. Dunhill.—p. 557.
Id. III. Treatment by Ligation. L. Rogers.—p. 561.
Dental Sepsis and Septicemia. E. M. Brockbank.—p. 562.
Dental Conditions Likely to Form Sources of Infection. B. J. Rodway.—p. 564.
*Obstruction of Small Intestine by Gallstones. C. Bennett.—p. 565.
*Tuberculosis Immunization. N. Raw.—p. 566.
Fracture of Skull and Extradural Hemorrhage with Symptoms of Hypotension. S. Smith.—p. 566.
Injections of Acriflavine for Tuberculosis. G. H. Johnson.—p. 567.
Paratyphoid A Fever in Scotland. A. M. Laurie.—p. 567.
Cystic Dilatations of Ureter: Removal of Ureteric Calculus per Vaginam. I. Atkin.—p. 568.
Sac of Cervix with Retained Menses. A. P. Linton.—p. 568.

Obstruction of Intestine by Gallstones.—Bennett reports three cases without mortality. In one case, a stone 1 inch (2.5 cm.) in diameter, weighing 140 grains (9.5 Gm.) was impacted in the ileum, 20 inches (50 cm.) proximal to the ileocecal valve. In the second case, the stone was a truncated cone. The greatest length equaled the greatest breadth; namely, 1⅛ inches (3 cm.). The dry weight was 180 grains (12 Gm.). It was lodged in the ileum, 4 or 5 inches (10 or 12.5 cm.) proximal to the ileocecal valve. The stone removed from the ileum in the third case was ovoid in shape, the greatest circumference being 5½ inches (14 cm.) and the weight was 636 grains (42.5 Gm.)

Active Immunization Against Tuberculosis.—Raw's experience with active immunization of animals against a virulent dose of tubercle bacilli has been encouraging, and he hopes that in the near future the work will be extended to young children, with a view to protecting those who are in daily contact with cases of open tuberculosis.

1: 603-640 (April 3) 1926

Endocarditis. T. Horder.—p. 603.
Frontal Sinus. W. O. Lodge.—p. 607.
Chronic Pelvic Pain in Women. A. Alcock.—p. 609.
*Noninfective Arthritis in Women. E. P. Cumberbatch and C. A. Robinson.—p. 612.
*Later Results of Insulin Treatment. A. P. Thomson.—p. 613.
Fissured Fracture of Thigh with Few Symptoms Until Month Later. H. A. L. Banham.—p. 615.
Acute Gastric Ulcer Associated with Pernicious Anemia. A. M. Pollock.—p. 615.
Chondrosarcoma of Index Finger. C. H. Lee.—p. 616.

Noninfective Arthritis in Women.—Cumberbatch and Robinson assert that there exist cases of arthritis occurring at either end of menstrual life which are not due to infection; that in some of these, at all events, the arthritis is due to deficiency of ovarian hormone, and that in these the arthritis and accompanying ill health are efficiently treated by heating the pelvic organs by means of diathermy.

Results of Insulin Treatment.—Of 100 patients with diabetes of all types treated by Thomson with insulin and dieting, seventy-five survive—sixty-one in good health and fourteen in poor or moderate health. Of the twenty-five deaths that occurred, one resulted from the treatment and ten others were not directly due to diabetes but may have been accelerated by it; in seventeen of the fatal cases there were definite complications. Of twenty-one patients with coma either actually treated in the stage of full unconsciousness or close to it, twelve recovered. Of the ten patients concerned, five remain in fairly good health; the others have since died. A type of persistent coma which Thomson believes particularly liable to occur in treatment by insulin is described. Recovery from this type of coma after intrathecal injection of insulin is recorded. The importance of early insulin treatment in young patients is emphasized. All patients who have kept a normal blood sugar and have remained free from glycosuria have done well; their condition at this time, however, does not appear materially better than that of those who have shown glycosuria at times but who nevertheless have managed to keep the early morning specimen free.

China Medical Journal, Shanghai

40: 185-308 (March) 1926

Public Health Work in Missionary Enterprise. W. W. Peter.—p. 185.
Hookworm in Kwong Tung. F. Oldt.—p. 240.
Opportunity for Preventive Medicine in China. F. J. Wampler.—p. 249.
Health for China's Children. I. M. Miller.—p. 253.
Growth of Chinese. V. B. Appleton.—p. 259.
Sewage Disposal Projects of Foreign Settlement of Shanghai. C. Harpur.—p. 264.

Glasgow Medical Journal

23: 161-240 (March) 1926

Miners' Nystagmus. F. Fergus.—p. 161.
*Sense of Smell. J. L. Halliday.—p. 182.
*Cardiopulmonary Syndrome in Early Rheumatism. O. H. Mavor.—p. 200.
*Variation in Mortality from Cancer Among Persons in Different Districts of Glasgow and Its Relationship to Social Status. M. Young.—p. 205.

Sense of Smell.—Halliday asserts that the responses of odors may be considered as a form of chemotaxis; in man they remain primitive in type, and consist mainly of mass movements of attraction or repulsion. Smells have no intellectual value, as integration at the higher levels does not

occur. Grouping of smells does not take place in the mind, as there is no abstraction of qualities common to a series of smells. The individuality and isolation of the responses to odors largely explain the infinite variety of smells. As no real mental grouping occurs, the construction of a spectrum of odors would appear to be a human impossibility; for a similar reason the theory that an art could be founded on odors is fallacious. As there is no abstraction of their qualities, symbolic formulation of smells cannot take place. The expression in speech of the conscious responses to odor is therefore limited, and there is a natural aphasia which corresponds to certain cases of acquired aphasia in which an anatomic lesion produces a dissolution of the higher levels of function.

Cardiopulmonary Syndrome in Rheumatism.—In the routine examination of cases of rheumatism Mavor has been impressed with the appearance of a certain group of signs over the base of the heart. This group is present in cases in which there is at least a presumption of rheumatic infection, and may or may not coincide with other cardiac manifestations. The signs are not susceptible of being recorded by instruments or corroborated and explained by postmortem examination. The phase of the disease at which they occur is seldom mortal. The signs are as follows: The cervical veins are visible and pulsating, and this is usually more obvious on the left side of the neck. The veins appear to collapse on ventricular systole. On very slightly forced inspiration they stand prominently. Pulsation is visible, or at least palpable in the second and third left interspaces. A faint diastolic shock is felt in this area. The resting pulse is rapid—about 100 per minute. Tachycardia, with some irregularity, appears on exertion. Percussion yields a relatively dull note from the first interspace to the base of the precordial dulness, and for an inch and a half or more to the left of the sternum. Over this area the respiratory murmur is bronchovesicular, and the bronchial sounds are audible horizontally for twice the distance over which they can be heard on the right side. A local cog-wheel rhythm is very common, and vocal fremitus, vocal resonance and whispered sounds are relatively increased. A peculiar bruit is heard in the neighborhood of the second left interspace close to the sternum. It begins at, or very shortly after, the closure of the first sound. It is loud, moderately pitched, and rather rasping, like the passage of a hard cloth-brush over silk. It runs crescendo up to an accentuated second sound, whose quality is like that of the rapping first sound in classic mitral stenosis. The bruit may, in some cases, begin as a soft blow masking the close of the first sound, but it always takes on a harsh quality as it gathers volume. Outside this area, a common pulmonary systolic murmur may be heard. The bruit does not necessarily vary with respiration, but if it does, it becomes first louder and then fainter on inspiration. Forced inspiration may abolish it. It is louder when the patient sits up or takes the knee-elbow position. It may disappear altogether for a period of days and may vary in intensity during a single examination. During its absence the second sound is often reduplicated.

Social Status and Cancer Mortality.—The medical officer of health for the city of Glasgow has hinted that cancer in Glasgow among the leisure classes is more than twice as prevalent as it is among the wage earners. Young, on the other hand, fails to find any evidence of coincidence between a relatively excessive mortality rate from cancer in the municipal wards of Glasgow and high social status of the residents therein, such as might be inferred from their crude mortality rates for this disease; indeed, the correlation coefficients that have been calculated appear to suggest that a definite tendency to the converse relationship exists.

Irish Journal of Medical Science, Dublin

Sixth Series, 105-152 (March) 1926

History of School of Physic, Trinity College, Dublin. T. P. C. Kirkpatrick.—p. 110.
Suppression of Gastrojejunostomy. V. Pauchet.—p. 124.
Congenital Hypertrophic Pyloric Stenosis. W. Taylor.—p. 128.
Prophylaxis of Diphtheria. V. M. Synge.—p. 131.
*Meningitis Carcinomatosa. T. G. Moorhead and T. J. Wigham.—p. 135.

Meningitis Carcinomatosa.—The patient, whose case is reported by Moorhead and Wigham, complained of pain in his head, vomiting and breathlessness. He was extremely cyanosed. He presented the typical phenomena associated with meningitis. The diagnosis was serous meningitis, following influenza, or some similar infection. A postmortem examination was refused, but the brain and spinal cord were removed. Apart from the very slight thickening here and there of the pia mater, absolutely nothing abnormal could be detected. Microscopic sections disclosed a tumor growth of endothelial type covering over practically the entire cerebral cortex, and also the cerebellum. The growth was far too thin to be visible to the naked eye, except here and there as a slight opacity of the pia. In the spots in which the pia appeared most thickened, the tumor formation was extending into the brain, its most characteristic arrangement being a single row of cells surrounding vessels. In these areas also the brain occasionally showed necrosis, nothing but the vessels and tumor cells being left intact. This penetration was most plainly to be found in the cerebellum in which the cells were mostly in small solid columns with only slight tendency to the formation of a hollow tube. In a few places the cells formed larger masses; even then there was some slight tendency for the cells to lie in rows. Examination failed to reveal any definite tumor mass which might be the primary focus from which the rest was derived.

Journal of Laryngology and Otology, Edinburgh

41: 137-208 (March) 1926

Investigations on Development of Sphenoidal Sinus. P. H. G. van Gilse.—p. 137.
Investigation of End-Results of Sixty Cases of Radical Mastoid Operation with Special Reference to Hearing. J. A. Keen.—p. 145.
*Four Cases of Tracheal Tumors. J. Adam.—p. 174.
Cerebellar Cyst, Simulating Tumor of Right Acoustic Nerve, Operated on by Translabyrinthine (Panse) Method. W. B. Brownlie and J. M. Wishart.—p. 178.
Chronic Hyperplasia of Upper Jaw. J. A. Jones.—p. 184.

Tracheal Tumors.—Adam's cases were: endothelioma, two cases; sarcoma and fibroma, one case of each. Adam warns that tracheal tumor is liable to be mistaken at first for asthma. This mistake occurred in two of his cases.

Journal of Tropical Medicine and Hygiene, London

29: 69-84 (March 1) 1926

Yellow Fever Problem in Africa. W. H. Hoffmann.—p. 69.
Malaria in West Africa in 1893. G. R. Hall.—p. 70.

19: 85-100 (March 15) 1926

Treatment of Trypanosomiasis in Uganda. C. H. Marshall and S. M. Vassallo.—p. 85.
Environmental Influences Which Favor Development and Spread of Bilharzia Parasite in South Africa: Food Supply of "Physopsis." F. G. Cawston.—p. 89.

Lancet, London

1: 695-744 (April 3) 1926

Endocarditis. T. Horder.—p. 695.
Development of Psychopathology: Its Place in Medicine. B. Hart.—p. 700.
*Treatment of Ileus by Choline. C. G. L. Wolf and J. R. C. Canney.—p. 707.
*Amount of Antitoxin to Streptococcus Scarlatinae Present in Blood of Convalescent Scarlet Fever Patients. H. Henry and F. C. Lewis.—p. 709.
*Herpes Zoster Oticus and Allied Conditions. T. Guthrie.—p. 710.

Treatment of Ileus by Choline.—While engaged in an investigation of the rhythmic movements of the small intestine in 1912, Weiland made the chance observation that when a piece of isolated intestine was allowed to contract in Ringer's solution for some time the fluid acquired the property of exciting contraction in other pieces of intestine placed in it. Le Heux, another worker in Magnus' laboratory in Utrecht, isolated the substance causing this effect and identified it as choline. This base is related chemically to muscarine, the principle found in poisonous mushrooms. Wolf and Canney report three cases of ileus in which choline appeared definitely to restore muscular tone and contraction in the intestinal wall, in one of the cases, after all other remedies had failed over the space of three days. The administration of choline is a simple matter. Sterile choline hydrochloride is put up in

glass ampules containing 600 mg. in 6 cc. This solution is diluted with 180 cc. of sterile physiologic sodium chloride solution, and the resulting solution is injected intravenously. An important point in administration is that it should take at least seventeen minutes to inject the whole quantity.

Scarlet Fever Antitoxin in Convalescent's Blood.—If the unit of antitoxin is taken as that amount which gives complete neutralization of one skin test dose, then out of twenty scarlet fever children, seventeen were found by Henry and Lewis to yield a serum which contained 50 units or more of antitoxin, whereas of the nonscarlet fever children only eight reached this titer. Of the twenty children with scarlet fever, nine yielded a serum containing 125 units or more, whereas only three of the children not having scarlet fever did so. The 250 unit level was reached by five scarlet fever children and by one nonscarlet fever child.

Herpes Zoster Oticus.—Three cases are reported by Guthrie, the first two being characteristic examples of herpes zoster oticus, and the third a case of herpes facialis with eighth nerve symptoms.

Medical Journal of Australia, Sydney

1: 261-286 (March 6) 1926

*Fever Resembling Mild Form of Typhus Fever. F. T. Wheatland.—p. 261.
Some Urinary Complications and Their Management. S. H. Harris.—p. 266.
Value of Ventriculogram in Localization of Cerebral Tumors. R. Noble.—p. 268.
Surgical Technic of Pneumoventriculography. R. H. P. Monson.—p. 271.
Technic of Cisternal Puncture: Application in Treatment of General Paralysis by Arsenicalized Serum. B. T. Edye.—p. 272.
Case of Chronic Enlargement of Tonsils Requiring Emergency Tracheotomy. B. K. Watkins.—p. 273.

Fever Resembling Typhus.—A fever of about twelve or fourteen days' duration, characterized by severe headache and a macular rash on the body and limbs, is described by Wheatland. The fever is believed to be identical with that described by Hone in Adelaide. It is not contagious. It is probably transmitted by some ectoparasite associated with the mouse. Wheatland suggests the existence of a group of diseases resembling typhus fever of which this fever is a member.

Oriental Journal of Diseases of Infants, Kyoto

1: 1-50 (Jan.) 1926

Congenital Bone Syphilis. T. Suzuki.—p. 1.
Beriberi Control from Administrative Standpoint. J. W. H. Chun and Wu Lien Teh.—p. 25.
*Diagnostic Sign in Pneumonia of New-Born. K. Hatai.—p. 36.
Dysentery in Children Caused by Mixed Infection with Y Type Dysentery Bacillus and Micrococcus Tetragenus-Aureus. K. Yoshitomi.—p. 39.
Dysentery in Nurslings in Orient. N. Hoshi.—p. 41.
Roentgen-Ray Study of Skulls of Japanese Children. K. Okashima.—p. 43.
Lung Abscess in Nursling Caused by Pneumococcus. R. Yoshida.—p. 44.

Diagnostic Sign of Pneumonia in New-Born.—The sign described by Hatai is an attack of asphyxia. He believes that it is caused by a weakness of the respiratory center. It indicates severity of involvement but not necessarily an unfavorable prognosis, as many of these patients survive.

Tubercle, London

7: 313-368 (April) 1926

*Sanatorium Treatment in India. C. Frimodt-Möller.—p. 313.
*Tuberculosis Inoculata of Guinea-Pig. G. R. Ross and W. J. Tulloch.—p. 321.
Sanatorium Treatment as Provided by United States Government for Tuberculous Veterans of World War. E. H. Bruns.—p. 335.
Experimental Results with Sanocrysin at Chicago Municipal Tuberculosis Sanitarium. H. C. Sweany.—p. 343.

Sanatorium Treatment of Tuberculosis in India.—The evidence presented by Frimodt-Möller shows that sanatorium treatment of tuberculosis in India is apparently of equal value to that in the West, and, when Indian conditions are taken into consideration, perhaps of even greater value.

Tuberculosis Inoculata in Guinea-Pigs.—Ross and Tulloch have succeeded in producing a slowly progressing tuberculosis in the guinea-pig by the subcutaneous inoculation of measurable and easily handled quantities of virulent cultures.

Archives des Maladies de l'Appareil Digestif, Paris

15: 991-1118 (Dec.) 1925

Intestinal Parasitism and Tuberculosis. A. Cade et al.—p. 991.
Volvulus of the Appendix. J. Leveuf and A. Moruzi.—p. 1005.
*Serologic Test in Diagnosis of Gastric Cancer. A. Roccavilla.—p. 1012.

Serologic Test for Gastric Cancer.—Roccavilla thinks that Salomon's test can be dependable if an extremely potent immune serum is used for the test. He found the response constantly negative in five subjects with normal stomachs, and positive in eight of ten with cancer of the stomach. The exceptionally potent anticancer immune serum was obtained from rabbits prepared by repeated injections of an emulsion of resected gastric cancer tissue; the controls by injections of simple fasting gastric juice. The reaction allowed identification of the patient's endogastric proteins, revealing or excluding malignant disease with nearly 90 per cent accuracy.

16: 3-152 (Jan.) 1926

*Rôle of Infection in Peptic Ulcer. P. Duval et al.—p. 3.

Infection in Gastric and Duodenal Ulcer.—This entire issue is devoted to research on the share of infection in the evolution of gastric and duodenal ulcers. Duval and his co-workers describe how infection modifies the clinical symptoms and the histologic and biologic findings even of perforated ulcer. No operation should be attempted during an acute phase of infection or before the abnormal biologic reactions have disappeared. To prepare the patient for the operation is thus the main thing. Bed rest, preoperative vaccination, and operating in sound tissues improve the prognosis.

16: 153-272 (Feb.) 1926

*Tetany of Gastric Origin. R. Grégoire.—p. 153.
Colectomy. A. G. Weiss.—p. 169.
Phenoluria and Urobilinuria. E. Binet and A. M. de Fossey.—p. 226.

Surgery in Tetany of Gastric Origin.—Grégoire discusses the explanation of tetany associated with gastric disturbances. Obstruction of the pylorus and subsequent repeated vomiting entail a reduction of hydrochloric acid in the organism, and thus induce physical and chemical changes in the blood serum. This causes irritation of the nervous system and tetany. When symptoms denote an impending attack of tetanic spasms, it may be averted by injections of from 800 to 1,000 Gm. of physiologic salt solution, with or without addition of 10 Gm. of sodium bicarbonate. This combats the dehydration. The next step is to remove the obstacle in the pylorus. Gastro-enterostomy is sufficient in most cases; otherwise, it has to be completed by a more radical operation later. While with expectant treatment the death rate has averaged 80 per cent, after operative treatment it dropped to 37 per cent.

Archives de Médecine des Enfants, Paris

29: 73-129 (Feb.) 1926

The Craniotabes Bugaboo. J. Comby.—p. 73.
*Hypertrophy of the Heart in Infants. G. Mouriquand et al.—p. 83.
Rat-Bite Fever in Paris Region. E. Apert et al.—p. 92.
Treatment of Imperforate Anus. E. Desmarest and D. Ebrard.—p. 96.
*Mutism in Typhoid in Children. E. Debbas.—p. 102.
The Erythredema of Young Children. J. Comby.—p. 105.

Hypertrophy of the Heart in Infants.—Mouriquand, Bertoye and Charleux describe a case of hypertrophy of the heart in an infant, aged 13 months. The hypertrophy was associated with grave anemia. The systolic murmur heard in the precordial region was so intense as to suggest interventricular communication. Necropsy showed the interventricular septum intact, with coexisting hypertrophy of the kidneys. The latter as well as the heart appeared histologically sound. Thus the murmurs were merely of inorganic origin. The rarity of these murmurs in infants is explained by the relatively weak contractions of the myocardium at that age.

Dumbness Accompanying Typhoid in Children.—Debbas has observed within a year four cases of dumbness in the course of typhoid, in children, aged from 3 to 7. In one instance it persisted for ten days; in three for a month. In none of these cases was there any meningeal reaction.

Bulletins de la Société Médicale des Hôpitaux, Paris

50: 452-508 (March 19) 1926

*Research on the Dick Test. Leané and Dreyfus-Sée.—p. 452.
Unilateral Paralysis of Cranial Nerves. G. Guillain et al.—p. 456.
Multiple Interauricular Openings. M. Villaret et al.—p. 460.

Venous and Capillary Pressure in Raynaud's Syndrome. M. Villaret and L. Justin-Besançon.—p. 465.
*Fixation Abscess in Septicemia. M. Villaret et al.—p. 472.
*Significance of the Dick Test. R. Debré et al.—p. 476.
*Cerebrospinal Fluid in Serum Sickness. V. de Lavergne and E. Abel.—p. 488.
*Phenoluria and Diuresis. M. E. Binet et al.—p. 491.
Hair System with Hyperthyroidism. P. Sainton and J. Peynet.—p. 493.
Splenic Anemia of Spirochetal Origin? M. Raynaud et al.—p. 496.
Atresia of Tricuspid Valve. J. Cathala and Tisserand.—p. 501.
The Dick Test in Measles. J. Paraf.—p. 506.

The Dick Test.—Lesné and Dreyfus-Sée relate that pseudo-reactions were avoided when using Zoeller's toxin (purified by acetic acid and sodium chloride). They applied this toxin in seventeen children, aged from 2 to 13, without any scarlet fever history. In eleven the Dick test was positive; it was negative in six, thus testifying to a spontaneous immunity. In a group of twenty-one with scarlet fever, the reaction was positive in seven and negative in five by the third to the seventh day. Of fifteen convalescent children, the Dick test was negative in twelve; positive in three on the twenty-sixth to thirty-fourth day. The test was also negative in a child who had had scarlet fever several years before. Their conclusion is that the Dick test cannot be applied in diagnosis of scarlet fever, present or past. Neither does it testify unerringly as to the receptivity or immunity of a subject, or prove the streptococcus toxin theory as to the cause of the disease.

Septicemia with Recovery After Fixation Abscess.—Villaret and his co-workers observed multiple manifestations of staphylococcus septicemia in a tuberculous young man. The usual drug treatment as well as vaccines were without avail for five months, until finally an abscess developed spontaneously on the right thigh. It was incised and the general condition improved and no local or general signs of the staphylococcus infection have reappeared during the four months since. The simultaneous improvement of the tuberculous lesions in the lung may be ascribed, they think, to humoral changes and increased leukocytosis induced by this spontaneous fixation abscess.

The Dick Test from Standpoint of Immunity to Scarlet Fever.—Debré, Lamy and Bonnet have applied the Dick test in 677 children. The reaction was positive in 25 per cent under 1 year; in 44 per cent from 1 to 3 years, gradually dropping to 15 per cent at the age of 15. The proportion of positive reactions in 122 adults was 10 per cent. At the onset of scarlet fever the Dick test was positive in eight of nineteen children; negative in ten, and a pseudoreaction was noted in one. In all of sixty-four convalescent children, the reaction was negative. In four cases of scarlet fever a positive Dick test had been recorded a few weeks or months before. The reaction became negative in all in the course of convalescence. In ten instances a mild form of scarlet fever appeared within forty-eight hours after one or repeated injections of streptococcus toxin. They query whether this was a mere coincidence, or whether a minimal dose of toxin had induced phenomena of sensitization in bacilli carriers. The extinction of a positive Dick test by a mixture of toxin and serum paralleled always the blanching of the scarlet fever eruption in the Schultz-Charlton test. The intradermal reaction was applied in ten cases of different streptococcus affections; in nine it was negative; a pseudoreaction appeared in the tenth. They conclude that the Dick test cannot help in diagnosis of scarlet fever; but it may reveal whether or not there is immunity to the disease, and indicate the proper serum for prophylaxis or treatment of scarlet fever.

Changes in Cerebrospinal Fluid in Serum Sickness.—De Lavergne and Abel examined the cerebrospinal fluid of twenty children and adults with serum sickness, especially with generalized urticaria, after one or repeated injections of an antiserum. There was an increase of sugar, and lymphocytosis; the amount of albumin remained normal. Coexistence in these cases of headache, nausea and vomiting suggests a possible meningeal reaction, responsible for the changes in the cerebrospinal fluid. Meningeal reactions and subsequent radiculitis may explain certain paralyses following injections of serum.

Phenol Autointoxication and Diuresis.—Binet, Mathieu de Fossey and Goiffon noted an exaggerated content of phenol in the urine in seven of eleven cases of colitis, and in six of eight cases of obesity, diabetes, gout or overeating. High phenoluria was manifest only in two of nine cases of constipation, without colon disturbances. There was pronounced phenoluria in ten out of eleven cases with associated lesions of the cecum, colon or gallbladder. This was always accompanied by an excessive urobilinuria. In twenty of twenty-five cases of phenoluria, the diuresis was increased; in the others there was only 1 liter of urine or even less, in twenty-four hours. Phenomena of auto-intoxication existed only in the latter. It thus appears that not only the liver neutralizes a part of the phenols from intestinal putrefactions, but there is also an elimination by way of the kidneys, a compensatory diuresis.

Bulletin de la Soc. des Sciences Méd., Montpellier

6: 469-502, 1925

*The Neuroglia and the Third Element in the Nerve Centers. P. del Rio Hortega.—p. 469.

The Third Element in the Nerve Centers.—Del Rio Hortega's fine photomicrograms sustain his assertions in regard to the third element in the nerve centers, which he calls provisionally the microglia. It is always more abundant in gray matter than in white, and seems to occur identically in all vertebrates. It migrates to points where it is needed, and hypertrophies, adapting itself to local space conditions, and phagocyting the waste products of nerve tissue. In these various phases it has been called by different names, and conflicting theories have been based on it. He regards its scavenger function as part of its general task to keep away from contact with the neuron everything that might hamper the exalted function of the latter.

Comptes Rendus de la Société de Biologie, Paris

94: 233-300 (Feb. 5) 1926. Partial Index

*Electromyograms. C. Laubry et al.—p. 240.
The Bacteriophage and Killed Bacteria. F. Duran Reynals.—p. 242.
*Invisible Forms of Visible Bacteria. P. Hauduroy.—p. 246.
Effect of Roentgen Rays on Plant Cells. G. Nadson and E. Rochlin-Gleichgewicht.—p. 249.
Filtration of Virus from Mouse Sarcoma. Harde and Henri.—p. 251.
Action of Atropine on Heart Rhythm. Hazard and Mercier.—p. 254.
Resistance of Guinea-Pigs to Toxins plus Tapioca. Grasset.—p. 260.
Freezing Method for Production of Autoneurotoxin. Speransky.—p. 262.
Serum Treatment of Mental Diseases. M. Weinberg.—p. 264.
*Cholesterol and the Spleen. E. E. Abelous and L. C. Soula.—p. 268.
*Hemolysis and Amino-Acids. Loeper et al.—p. 271.
Formation of Amino-Acids in the Spleen. Loeper et al.—p. 272.
*Parallel Development of Thyroid and Pancreas. M. Aron.—p. 275.
*Hypercholesteremia and Cataract. D. Michail and P. Vancea.—p. 291
Eye Implant in the Peritoneum. D. Michail and P. Vancea.—p. 294.
Passive Anaphylaxis. I. Moldovan and M. Zolog.—p. 299.

Electromyograms and Muscle Fatigue.—Laubry, Walser and Deglaude isolated the gastrocnemius muscle of a frog (with intact nerve and vessels) and exposed it to the faradic current. The recorded electromyograms resembled the electrocardiograms usually attributed to block of branches of the bundle of His. Of course no conduction apparatus could be involved in these muscle experiments. It is possible that the changes revealed by the electrograms are in both instances of muscular origin; namely, due to muscle fatigue.

The Invisible Forms of Visible Bacteria.—Hauduroy found abnormal forms of bacteria in polluted well waters, which he isolated by filtration. Further research demonstrated different stages of these bacteria. First the bacteria are invisible; then they acquire a granular form; and finally change to the form by which they are known now.

The Cholesterogenous Property of the Spleen.—Abelous and Soula severed the crural and sciatic nerves in chloralosed dogs, and then excluded the spleen from the general circulation. After the peripheral ends of the nerves had been faradized for five minutes, blood was withdrawn from the femoral artery and vein. There was less cholesterol in the venous blood than in the arterial, while there was more cholesterol in the vein than in the artery after the circulation had been restored in the spleen. This seems to confirm that the internal secretion of the spleen increases the amount of cholesterol.

Hemolysis and Amino-Acids.—Loeper, Decourt, Olivier and Lesure conclude from their research that hemolysis is one source of amino-acid formation as well as of formation of the bile pigment. A part of the amino-acids may be produced by hemolysis occurring in the spleen itself.

Parallelism of Thyroid and Pancreas Development.—Aron observed that the appearance of colloid secretion in the thyroid coincided with that of Langerhans' islands in the pancreas. Both organs develop very early in the cow fetus; in the pig fetus, only during the last weeks of intra-uterine life; in the guinea-pig fetus during the last days. The functional characters of the thyroid and pancreas are definitely established simultaneously in the human fetus, at the end of the third month of pregnancy.

Hypercholesteremia and Naphthalene Cataract.—Rabbits were fed a mixture of glycerin and naphthalene. Lesions of the retina appeared by the twelfth to twentieth day, followed by bilateral cataract. The eye phenomena were preceded by a two or threefold amount of cholesterol in the blood. The theory is that disturbances of the suprarenal secretion may induce cholesteremia and the eye lesions. Michail and Vancea emphasize the analogy between the hypercholesteremia from naphthalene and the hypercholesteremia with senile cataract. With congenital or juvenile cataract, the cholesterol content of the blood is normal. It is possible that deranged functioning of the suprarenals may be a factor in senile cataract, and deranged functioning of the thyroid and parathyroids a factor in congenital or juvenile cataract.

Encéphale, Paris

21: 1-88 (Jan.) 1926

Multiform Deliriums. R. Targowla.—p. 18.
*Tumors of the Frontal Lobe. P. Escuder Núñez.—p. 37.
True Paranoia. H. Claude and M. Montassut.—p. 57.
*Pupil Immobility with Alopecia Areata. E. Herman.—p. 64.

Tumors of the Frontal Lobe.—Escuder Núñez reviews the clinical syndrome of tumors of the frontal lobe as observed in two personal cases and in sixteen recorded observations. Unilateral loss of the sense of smell, choked disk, deviation of the head and feet to the opposite side, or paralysis of the movements of the head and eyes to the opposite side are the sensory and motor symptoms. The psychic symptoms from excitation include hyperexcitability of the imagination, and moral insanity; from inhibition, somnolency and partial stupor, with or without other general symptoms of a brain tumor, headache, vomiting, dizziness, intraspinal hypertension, etc. A two-stage operation seems to be preferable to a single sitting. The first stage of decompression is often followed by improvement, and sometimes by survival for several years. Béclère and Nordentoft have reported remarkable results from radiotherapy, combined or not with an operation. He has had no personal experience in this field.

Alopecia Areata of Sympathetic and Endocrine Origin.—Herman reports a case of alopecia areata in a girl, aged 14. The affection, starting three years before after a severe fright, was accompanied by epileptic seizures. It induced loss of hair of the head and body as well as of the eyebrows and lashes. Clinical examination revealed general debility, insufficiency of the ovary and pituitary, possibly also of the thyroid gland. Besides the endocrine disturbances, there were phenomena of sympathicotonia, including spontaneous dilatation of the pupils and transient immobility to light. This may have been caused by excessive irritability of the sympathetic system and consecutive spasm of the dilator of the iris.

21: 89-160 (Feb.) 1926

*Bulbar Syndrome. G. Marinesco and S. Draganesco.—p. 89.
*General Paralysis. Sézary and Barbé.—p. 99. Begun, p. 1.
Malaria Treatment of General Paresis. Nicole and Steel.—p. 116.
Brain Tumor with Psychasthenic Syndrome. Marchand and Schiff.—p. 121.

Syndrome from Interolivary Region.—The syndrome was observed by Marinesco and Draganesco in a previously healthy man, aged 55. The disease had commenced ten years before with paresis of one side of the body, five years later involving the other side. Finally bulbar disturbances appeared, such as difficulty in swallowing, and in the use of the tongue, sometimes aphonia. The case was considered a form of amyotrophic sclerosis or atypical syringomyelia. The necropsy findings showed atherosclerosis of the spinal cord, pons and medulla, especially of the region between the olivary bodies. The large patch of necrosis in the latter region explains the paralysis of all the limbs. Coexistence of intraneuraxial neuromas, as well as the incomplete development of the medulla and spinal cord suggest a possible congenital origin of the disease. The six somewhat similar cases on record all ran a rapid course.

Drugs in Treatment of General Paralysis.—Sézary and Barbé compare the action of different drugs in eighty-eight cases of general paralysis. They conclude that arsenicals are most effectual, while they influence favorably the mental condition of the patients. The quinquivalent are usually superior to the trivalent. Bismuth has no action on the mental condition but, owing to its biologic action, especially on the leukocytosis of the cerebrospinal fluid, it may be used as an adjuvant in treatment of general paresis.

Lyon Chirurgical

23: 1-134 (Feb.) 1926

The Albee Operation for Pott's Disease in Adults. L. Bérard and J. Creyssel.—p. 1.
*The Normal Stomach Secretion. E. Dahl-Iversen.—p. 14.
So-Called Sarcomas of the Kidney. R. Noel et al.—p. 30.
Strangulated Obturator Hernia. P. Bonnet.—p. 44.
*Ramisection. R. Leriche.—p. 60.
Flexner's Book "Medical Education." A. Policard.—p. 65.

The Normal Gastric Secretion.—Dahl-Iversen's experiments were made with thirteen young men and two young women—all healthy—and he tabulates the findings separately for each one for a week. An hour after an oatmeal gruel meal, with phenolphthalein for the indicator, the figure averaged 47, while with bromin-cresol-purple as the indicator, the figure was 41. With the Ewald test meal, the phenolphthalein figure was 54. He was astonished at the wide variations in the findings in different persons and at different times in the same person under apparently identical conditions. No influence from tobacco was apparent.

Ramisection.—Leriche has severed the rami communicantes in the neck in eighteen cases. The operation does not modify the sensations of contact, cold, heat and pain but it alters that mysterious internal sense of the reality of the existence of our body. He describes one case in which a man with an extremely painful amputation stump, and hallucination of painful contracture in the fingers of the missing hand, was freed from all his pains and hallucinations by ramisection from the second cervical to the first dorsal rami. Such cases suggest a new field for surgical treatment of painful and perverted cenesthesia, that is, the sense of conscious existence, of normal functioning of the organs of the body. The rami communicantes seem to be the vehicle for transmission of the cenesthesia stimuli.

Paris Médical

50: 293-308 (March 27) 1926

*Tuberculosis After Operations. Bezançon and Jacquelin.—p. 293.
Rare Forms of Extra-Uterine Pregnancies. A. Schwartz.—p. 297.
Various Technics for Blood Transfusion. A. Tzanck.—p. 301.
Forms of Pneumobacillus Sore Throat. J. Chalier et al.—p. 305.

Flaring Up of Tuberculosis of the Lung After Operations Elsewhere.—Bezançon and Jacquelin report seven cases in which an operation for nontuberculous affections as, for instance, appendicitis or hernia, was followed by development of tuberculosis in the lung. In four instances this occurred after ether; in three after chloroform. They never observed it after nitrous oxide or any local anesthetic. The skin test was applied in eighty-six cases after operation. It was negative in 40 per cent after ether; in 25 per cent after chloroform, and only in 7 per cent after intraspinal anesthesia. The fact confirms the toxic action of ether and chloroform on the liver; the postoperative anergy appearing as a form of liver anergy. Therefore in patients with suspected or a developing tuberculosis, an operation should be made preferably under local or intraspinal or even nitrous oxide anesthesia.

Union Médicale du Canada, Montreal

55: 1-66 (Jan.) 1926

Centenary of the "Journal de Médecine de Quebec." L. Pariseau.—p. 1.
*Scarlet Fever Antiserum in Hospitals. H. B. Cushing and Longpre. —p. 8.
Differential Diagnosis of Certain Scalp Diseases. A. Marin.—p. 15.
Acute Appendicitis. E. Trottier.—p. 27.
Ovarian Graft and Hysterectomy. A. Achpise.—p. 30.
Treatment of Typhoid Fever. A. LeSage.—p. 35.

Use of Scarlet Fever Antiserum in Montreal Hospitals.—Seventy-five nurses of the Alexandra Hospital entering the contagious disease service were given an immunizing dose of scarlet fever antiserum. About 9 per cent of them developed a mild form of the disease three weeks later. The preceding experience had been, before this attempt, that 15 per cent of all the nurses contracted grave scarlet fever during their service. It appears that the immunization from the scarlet fever antiserum does not last more than three weeks. A total of 125 scarlet fever patients have been treated with concentrated antiserum in the last six months. A dose of 5 cc. was injected intramuscularly in benign cases; 10 cc. by the vein in grave cases. There was no fatal outcome among those thus treated. In 200 patients of the Alexandra and St. Paul Hospitals, treated with this serum, the common complications of scarlet fever occurred more rarely, and they were always mild. No symptoms of serum sickness were noted after the concentrated serum was employed. The effect seems to be like that observed in diphtheria with antitoxin treatment.

Schweizerische medizinische Wochenschrift, Basel

56: 241-264 (March 20) 1926

*Technic for Filling Cavity in the Lung. A. Josefson.—p. 241.
Psychogenesis of Leukorrhea. W. von Arx.—p. 243.
*Sclerodermia and Roentgen-Ray Castration. P. Schwarz.—p. 246.
*Fat Embolism. R. Weingarten.—p. 248.
*Habitual Epistaxis. Gallusser.—p. 250.
*Heart in Exophthalmic Goiter. G. Bickel and E. Frommel.—p. 251.
Iodin in Proprietary Preparations. Hunziker.—p. 257.

Technic for Filling Cavity in the Lung.—Josefson has devised a combination of syringe and spatula to facilitate injection of contrast and therapeutic substances into the lungs.

Scleroderma and Roentgen-Ray Castration.—Schwarz' patient—a woman constitutionally substandard—developed scleroderma after sterilization by roentgen rays at the age of 40.

Fat Embolism.—Weingarten's study of 100 necropsies revealed no endogenous cause for the fat embolism—especially no nephritis. Slight traumas may be easily overlooked. Injections of camphorated oil may cause considerable accumulation of oil in the pulmonary capillaries.

Habitual Epistaxis.—Gallusser recommends submucous resection of the septum in habitual nosebleed and with a perforating ulcer of the septum.

The Heart in Exophthalmic Goiter.—Bickel and Frommel declare the prognosis in cardiac disturbances in exophthalmic goiter at the same time is infinitely better and infinitely worse than in heart disease of other origin. The prognosis is more favorable because severe arrhythmia and weakness may be followed by complete recovery, and the prognosis is graver because sudden death may occur with apparently slight changes of the heart.

Pediatria, Naples

34: 281-336 (March 15) 1926

*Desensitization in Infectious Diseases. G. Di Cristina.—p. 281.
*Acute Syphilitic Meningitis. A. Mazzeo.—p. 299.
Roentgenology of Whooping Cough. P. Pincherle.—p. 316.
Pathology of Consanguinity. F. De Capua.—p. 321.

Desensitization in Infectious Diseases.—Di Cristina deals with the specific inhibition of sensitization to bacterial proteins in infectious diseases, especially typhoid. Complete remission may follow an intravenous injection of the vaccine. The mechanism of the phenomenon is not clear, but the results are excellent.

Acute Syphilitic Meningitis.—Mazzeo reports four cases of grave acute meningitis in children between 5 and 24 months of age. The Wassermann test in the cerebrospinal fluid was positive, and the children recovered completely after use of mercurial ointment.

Policlinico, Rome

33: 361-394 (March 15) 1926

A Family of Hemophiliacs. R. Monteleone.—p. 361.
*Duodenal Alimentation. A. Trossarelli.—p. 365.
Dissociated Action of Insulin? A. Sanguinetti.—p. 368.
*Treatment of Malaria. V. Ascoli.—p. 370.

Duodenal Alimentation.—Trossarelli recommends Einhorn's method in treatment of gastric ulcers.

Treatment of Malaria.—Ascoli found quinidine more effectual in malaria than quinine. The action of cinchonine was less good.

33: 117-164 (March 15) 1926. Surgical Section

Gastric Secretion After Resection. M. Ascoli.—p. 117.
Cancer of Rectum and Signet Cells. C. Di Gioia.—p. 129.
*Secondary Jejunal Ulcers. S. Gussio.—p. 134. C'cn.

Secondary Jejunal Ulcers.—Gussio concludes from his experiments that a high gastric resection remains the best means for prophylaxis of secondary jejunal ulcers. The pyloric region may be left if the predisposition is not too grave.

Riforma Medica, Naples

42: 169-192 (Feb. 22) 1926

Syphilitic Diabetes. B. Sparacio.—p. 169.
Meningitis and Ascaridiasis. A. Jona.—p. 172.
Lingual Tonsillitis. A. Della Cioppa.—p. 174.
Tetany and Hypofunction of Suprarenals. R. Silvestrini.—p. 182.

Medicina Contemporanea, Lisbon

43: 369-376, 1925

Mineral Waters of Portugal from Medical Standpoint. Narciso.—p. 369.
*Retrogression of Tumor Under Organotherapy. J. Bacalhau.—p. 371.

Thyroid Treatment of a Mediastinal Tumor.—Bacalhau urges physicians to cooperate in studying the effect of organotherapy on tumors, as few hospitals are able to keep a patient long enough to determine the ultimate outcome. His success in a case described justifies, he says, extensive application of this method of treatment. His patient was a robust working man, aged 54, who in 1923 began to have dyspnea on exertion; cough and hoarseness soon followed, with progressive attacks of suffocation. The symptoms and radiologic findings indicated a tumor in the mediastinum and its growth upward threatened suffocation. The clinical course indicated a benign character, probably a lipoma, but its extension forbade operative intervention. No benefit was realized with treatment for syphilis—the Wassermann test was weakly positive—but Naamé's recent report of the retrogression of two malignant tumors under organotherapy encouraged its application in this case on the assumption of endocrine disturbance and the influence of the thyroid on the metabolism of fat. A testicle extract was given with the thyroid extract, and in five days there was considerable relief, allowing the patient some sleep at night. The tumor continued to retrogress and the man was discharged from the hospital in six weeks, with slight dyspnea on exertion as his only complaint. He takes the tablets only occasionally now, and has resumed his former occupation.

Archiv für klinische Chirurgie, Berlin

139: 245-664 (March 11) 1926

*Enterospasm. H. Steindl.—p. 245.
Anatomy of Biliary Apparatus. H. F. O. Haberland.—p. 319.
*Internal Fistulas. P. Clairmont.—p. 359.
Bleeding Breast. S. Erdheim.—p. 366.
*Postoperative Albuminuria. F. Schulze.—p. 413.
*Serum Proteins in Test Diuresis. C. H. Lasch.—p. 419.
Chronic Osteomyelitis. E. Stahnke.—p. 428.
Perforated Peptic Ulcers. H. Naumann.—p. 434.
*Homoioplasty of Skin. E. Gohrbandt.—p. 471.
Gallstones and Cancer of Biliary Passages. R. Lotzin.—p. 525.
Gastroptosis. V. Orator.—p. 539.
Changes in Ileum with Artificial Anus. H. Angerer.—p. 547.
Topography of the Phrenic Nerve. E. Ruhemann.—p. 557.
Physiology of the Vas Deferens. H. Boeminghaus.—p. 563.
Pseudarthrosis with Dystrophy of Muscles. H. Walter.—p. 574.
*Ileus and Drop in Blood Sugar. A. Kubányi.—p. 581.
Horse-Shoe Kidney. H. Boeminghaus.—p. 589.
Heart with an Arteriovenous Aneurysm. W. Rieder.—p. 597.
Roentgen Treatment of Sarcomas. H. Hueck.—p. 607.
Tabetic Osteo-Arthropathy of the Spine. Breitländer.—p. 616.
Deforming Spondylitis and Arthritis. A. Schanz.—p. 627.

Pathology of Seminal Vesicles. H. Boeminghaus.—p. 641.
Esophagoplasty. G. Axhausen.—p. 645.
"Bone After Wire Extension." Sommer.—p. 658. Reply. Block.—p. 662.
"Orchidopexy." Corrections.—p. 666.

Spasm in the Gastro-Intestinal Tract.—Steindl found degenerative changes in the medulla and pons, localized especially near the dorsal nucleus of the vagus, in four cases of intestinal spasms (spastic ileus in two of them). Calcium helps in such cases if administered in large doses. Paravertebral anesthesia produces a predominance of the vagus by inhibition of the splanchnic nerve and is therefore not advisable for spastic conditions in abdominal organs.

Internal Fistulas.—Clairmont interposes a well nourished pedunculated flap of subcutaneous fat from the thigh in treatment of vesicorectal or vesicovaginal fistulas.

Postoperative Albuminuria.—Schulze observed transitory albuminuria practically always, together with acetonuria, after surgical interventions made under ether or local anesthesia. He never saw it after intraspinal anesthesia.

Serum Proteins in Test Diuresis.—Lasch determined the fractions of serum proteins in diuresis tests. With good elimination, the total protein level of the serum rose; the globulin fraction declined. With deficient diuresis, either the total protein decreased while the globulins increased, or vice versa.

Homoioplasty of Skin.—Gohrbandt obtained successful transplantations of skin only in young rats of the same litter. He failed in 150 attempts in other animals. Parabiosis did not improve the results.

Ileus and Drop in Blood Sugar.—Kubányi found moderate hypoglycemia in some of his dogs with experimental ileus.

Deutsche medizinische Wochenschrift, Berlin

52: 473-516 (March 19) 1926

*Antagonism and Synergism. H. Führer.—p. 473.
*Syphilis of the Pharynx. Plaut.—p. 475.
Neurolapine and Vaccine Encephalitis. W. F. Winkler.—p. 477.
Acid Food for Infants. H. Vogt.—p. 478.
Climatotherapy of Surgical Tuberculosis. O. Gundermann.—p. 480.
Viper Bites. K. Werwath.—p. 481.
*Pernicious Anemia. V. Kairiukschtis.—p. 483.
Treatment of Jaundice. M. Rosenberg.—p. 485.
Conservative Treatment of Cholelithiasis. W. Schoendube.—p. 486.
Fruit and Vegetable Regimens. H. Determann.—p. 489.
Duodenal Lavage. F. Rabe.—p. 491.
Carcinoma of Intestine. H. Strauss.—p. 492.
Treatment of Pulmonary Tuberculosis. Kaminer.—p. 492. C'cn.
Occupational Diseases. Teleky.—p. 497. C'cn.
Physicians in Germany, 1925. Prinzing.—p. 498.

Antagonism and Synergism.—Führer, who as long ago as 1907 regarded tetany as guanidine poisoning, deals with various synergists and antagonists. Calcium is a true antagonist, barium a true synergist of guanidine. Strontium is its synergist in regard to the increased tonus, its antagonist by suppressing the rapid contractions of striped muscles. Dextrose and epinephrine are antagonists of guanidine. Combinations of different drugs may enhance one of the actions and suppress another—for instance, in a combination of amidopyrine with a barbital compound the narcotic action of both disappears while the analgesic effect becomes stronger. Bürgi's rule is evidently not universal.

Syphilis of the Pharynx and Mouth.—Plaut finds that a sudden beginning of the sore throat as well as the absence of fever speak against syphilis. A dental treatment received several weeks before may be an important item in the history of a primary lesion in the mouth. Not only tertiary but also secondary syphilis may cause an ulcerative membranous tonsillitis. He observed such a case in an elderly physician with a supposed panaritium, which was the primary lesion. Before the diagnosis was made, a son of the patient was infected by a kiss. Fusospirillar symbiosis in otitis media is frequently conditioned by syphilis. Absence of swelling of lymph nodes testifies against syphilis. Absence of fusiform bacilli and of spirochetes with a clinical picture of the Plaut-Vincent angina makes the diagnosis of tertiary syphilis probable.

Pernicious Anemia.—Kairiukschtis injected rabbits with an emulsion of bone marrow obtained at necropsies of pernicious anemia patients. The rabbits died under grave local and general symptoms. He believes that he found megaloblasts in the blood of some of them. His controls were all practically negative.

Klinische Wochenschrift, Berlin

5: 489-536 (March 19) 1926

*Seasickness and the Sense of Balance. H. Abels.—p. 489.
Clinical Research on Variations. H. Rautmann.—p. 493. C'td.
Fibrous Osteitis, Osteomalacia and Rickets. G. Schmorl.—p. 496.
*Lactacidemia in Cancer. H. Schumacher.—p. 497.
*Spirochetoses. G. Steiner and J. Steinfeld.—p. 499.
*Starvation Treatment of Epilepsy. P. Karger.—p. 502.
*Etiology of Nevi. Meirowsky.—p. 505.
*Cholesterol and Growth of Hair. R. Jaffé.—p. 507.
Pollen Content of Air. R. Wigand.—p. 508.
Current for Roentgen Work. M. Jona.—p. 509.
Trachoma. C. Pascheff.—p. 510.
*Liver Function Test.—p. 510.
Cochlear Reflexes. E. A. Spiegel and T. Kakeshita.—p. 510.
Schick Test in Diphtheria Bacilli Carriers. H. Meyer.—p. 510.
Fatal Poisoning with Oil of Chenopodium. A. Esser.—p. 511.
Amebic Dysentery. W. H. Lamberts.—p. 513.
Vocational Guidance. K. Brockmann-Rohne.—p. 517.

Seasickness and the Sense of Balance.—Abels analyzes the pathogenesis of seasickness. The unaccustomed tactile and kinesthetic stimuli, and especially those originating in the vestibular apparatus, are responsible. The novel nature, the long duration and the exogenous origin of these stimuli are of importance. The phenomena of seasickness are aggravated by any effort to perform complicated movements. Persons who have become immune to seasickness on one boat may get seasick on a boat of different construction.

Lactacidemia in Cancer.—Schumacher found an increased lactic acid concentration in the blood (22-34 mg. per hundred cubic centimeters) of those carcinoma patients who had metastases in the liver. The other patients had normal amounts (9-15 mg.).

Spirochetoses.—Steiner and Steinfeld obtained superinfections in animals that had been mildly infected with recurrent fever. Later on, it proved possible to cultivate reinjected spirochetes from the blood without any other signs of reinfection becoming manifest. The immunity may be increased for a few weeks by reinjection of virulent material.

Starvation Treatment for Epilepsy.—Karger had only a few fair results in treatment of epilepsy in children by starvation. He would reserve this treatment exclusively for cases of impending status epilepticus. An acidotic diet (meat, cream, eggs) was also effectual in a few instances. When he added a little sugar to the water allowed to the fasting children, the acetonuria disappeared and the seizures returned.

Etiology of Nevus.—Meirowsky surveys the evidence of the idiotypical conditioning of nevi.

Cholesterol and Growth of Hair.—Jaffé accelerated the growth of hair in rabbits by local application of ointments containing cholesterol. He explains the similar results obtained with tar by its action on the sebaceous glands. Administration of cholesterol by the mouth produced no results.

Liver Function Test.—A communication from the Merck establishment points out that only phenoltetrachlorphthalein (or its sodium salt) is suitable for the liver function test made by estimation of its disappearance from the serum. Tetrachlorphenolphthalein has not a sufficiently deep color.

Medizinische Klinik, Berlin

22: 397-436 (March 12) 1926

Vital Stimuli and Nerves. F. Glaser.—p. 397.
Conservative Treatment in Gynecology. Benthin.—p. 401.
*Necrosis After Benzene Occupational Poisoning. J. Löwy.—p. 404.
*Sclerosis of Portal Vein. W. Lehmann.—p. 405.
*Rupture of the Cardia by a Dilator. V. Maydl.—p. 408.
*Typhoid Bacilli Carriers. E. Bersch.—p. 409.
Treatment of Uterine Hemorrhages. F. Benzel.—p. 413.
Oxychromatic Changes of Nuclei. A. Luger and E. Lauda.—p. 415. C'td.
Tuberculosis and Occupational Disease. v. Schnizer.—p. 417.
Results of Neurologic Treatment. T. Cohn.—p. 420.
Survey on Infectious Diseases. H. Ziemann.—p. 422.
Social Medicine. R. Ziel.—p. 433.

Necrosis of Jaw After Occupational Benzene Poisoning.—Löwy's patient died of sepsis following necrosis of the upper jaw. He had been working in a tire factory with benzene and

other material. Leukopenia with relative lymphocytosis and anemia were present. An acute benzene poisoning causes fever and a leukocytosis with prevalence of polymorphonuclears.

Sclerosis of Portal Vein.—Lehmann reports the history of a case of two years' duration. Symptoms of Banti disease with repeated hematemesis speak for a sclerosis of the portal vein. No urobilin was found in the urine of the patient.

Rupture of the Cardia by a Dilator.—After having had perfect results with Starck's method of brusque dilation of the cardia in seven cases, Maydl reports a death due to rupture of the cardia during the procedure. The force applied in this patient had been less than in some of the successful cases.

Typhoid Bacilli Carriers.—Bersch removed the gallbladder containing calculi in five typhoid bacilli carriers. No elimination of typhoid bacilli has been observed since.

Münchener medizinische Wochenschrift, Munich

73: 433-474 (March 12) 1926

Twenty-Five Years of Uhlenhuth's Blood Test. G. Hauser.—p. 433.
Chronic Arthritis. W. Alwens.—p. 434. C'td.
Spirochetes in Malaria-Treated Paresis. J. Gerstmann.—p. 436.
Oligodynamic Action and Homeopathy. A. Buschke et al.—p. 437.
*Influencing the Soil in Infections. H. Finkelstein.—p. 439.
Roentgen Treatment of Hyperthyroidism. Sielmann.—p. 439.
Alimentary Leukopenia in Cancer. K. Rausche.—p. 441.
Sanocrysin Treatment. H. Jessen.—p. 444.
Uric-Acid Treatment of Tuberculosis. G. Padel.—p. 444.
Dislocation of the Mandible. C. Hörhammer.—p. 446.
"Medicolegal Obstetrics." VIII. M. Hofmeier.—p. 447.
Goniometer for Research on the Constitution. Mandelstamm.—p. 448.
Nephritis. C. R. Schlayer.—p. 449.
*Overburdening of School Children. G. Junge.—p. 452.
*Protection of Infants and Mothers in Russia. A. Dworetzky.—p. 463.

Influencing the Soil in Infections.—Finkelstein shows that successful attempts to influence infections by modifying the tissues by the diet were made long ago by pediatricians. A diet poor in salt dries the secretion in weeping eczema.

Overburdening of School Children.—Junge pleads against overburdening the children in the schools. No physician is ever asked for his advice when a change of curriculum is contemplated. Each branch of instruction tries to increase the allotted time. Recently the music teachers succeeded in forcing singing lessons on preparatory school (gymnasium) students who are as old as Leibniz was at the time of his refusal of a position as professor. And attendance at the singing lessons is compulsory, without regard to the students' musical inclinations.

Protection of Infants and Mothers in Russia.—According to Dworetzky, the new organization of the welfare work for infants and mothers has reduced infant mortality to one half the previous figure. In the Moscow province it was as high as 27.6 per cent in 1913, and was only 13.7 per cent in 1923 in infants under one year of age.

Wiener klinische Wochenschrift, Vienna

39: 293-320 (March 11) 1926

*Calmette's Vaccination. E. Löwenstein.—p. 293.
*Contagiousness of Erysipelas. F. Redlich and H. Krasso.—p. 294.
*Hysterectomy and the Artificial Menopause. L. Kraul.—p. 297.
*"Surgically Incurable" Gastric Ulcer. H. Finsterer.—p. 300.
*Pulsation of Abdominal Aorta. E. Pick.—p. 303.
*Angina Pectoris. L. Braun.—p. 304. C'en.
"Pregl's Kidney Function Test." F. Ody.—p. 305.
*Best Time for Cataract Operation. M. Sachs.—p. 306.
Cancer in Mouth. H. Pichler.—p. 307.
Nervous Diseases of the Stomach. L. Hess. Supplement.—pp. 1-20.

Calmette's Vaccination.—Löwenstein criticizes Calmette's method. The immunity the latter claims to have obtained was limited to administration of virulent tubercle bacilli by mouth, not by injection. Yet many of even these animals died of tuberculosis, and there was no evidence as to whether the germs contained in their tubercles were due to the vaccination or to reinfection. A germ which is not virulent for guinea-pigs may be gravely pathogenic for man. Löwenstein had demonstrated that infection of guinea-pigs by feeding with virulent tubercle bacilli requires six months to two years to develop. Therefore the preliminary good results in children are not convincing. The virulence of the ingested germs may increase, especially in the young.

Contagiousness of Erysipelas.—Redlich and Krasso report several instances of infection of other patients from erysipelas patients transferred to the internal clinic. They consider complete isolation necessary.

Effect of Hysterectomy and of the Artificial Menopause.—Kraul investigated the disturbances in 252 cases of removal of the uterus and ovary or roentgen sterilization. The extirpation of the uterus alone caused no symptoms of Aschner's "dyscrasia," especially no hypertension. Extirpation of the adnexa or roentgen sterilization caused graver disturbances than the natural menopause. Transitory hypertension is often associated with myoma.

"Surgically Incurable" Gastric Ulcer.—Finsterer objects to this term. He found that recurrences of jejunal ulcers are due to the Y shape of the anastomosis and to insufficient resection of the stomach. A good resection should remove the whole lesser curvature and the larger part of the greater curvature. This means removal of two-thirds of a normal stomach, and more of a dilated organ. The alleged jejunal ulcers with anacidity would disappear from the reports if the gastric secretion were examined two hours after a regular meal, instead of twenty minutes after the Ewald meal.

Pulsation of Abdominal Aorta.—Pick confirms the probability of functional disturbances with strong pulsation of the abdominal aorta. The continual irritation of its surroundings may cause gastric distress, simulating an ulcer.

Angina Pectoris.—Braun reviews critically the history of the syndrome. It is a remarkable fact that Edward Jenner was the first to point to a sclerosis of the coronary arteries, and refrained from publishing his observation from consideration for John Hunter who had just presented the first signs of angina pectoris. The pain is of a peculiar nature; no matter how great any other pain may be—as for instance in trigeminal neuralgia—it always remains outside of the mind. It never breaks into the innermost personality of the sufferer, as true angina pectoris does. The patient may try to control any other pain; he may cry or scream, but he has not the feeling of being completely overcome—absolutely passive—such as the patient experiences during the attack of angina pectoris. The latter is actually an uncanny sensation of impending dissolution. This distress is the most important feature of the attack, and may be the only one. Attacks occurring without any pain are especially dangerous. A neurotic person may describe the distress; a sufferer from angina pectoris lives it. If the neurotic begins to suffer from real angina pectoris, he drops the theatrical description and presents his report with restraint and dignity. At necropsy in his 127 cases, the lumen of the left coronary artery was always found more or less obliterated.

Best Time for Cataract Operation.—Sachs deals with the question when to operate for cataracts. The intervention is never urgent, and therefore a good preparation for it is possible. Any conjunctivitis endangers the outcome. The lacrimal apparatus must be taken care of—eventually by extirpation of the sac. Cough from a catarrhal affection of the respiratory tract may rupture the wound. Codein is advisable in the catarrh of smokers. The "expulsive hemorrhage" sometimes following the opening of the eyeball in arteriosclerotic subjects with hypertension, may be prevented by bromides and copious venesection. Maturity of the cataract is not essential for its removal. The indication for it is given rather by the condition of the other eye. If the latter is good, the patient can wait till the cataract is ripe. Conservative treatment—except with diabetic cataract—has always failed so far. Römer had tried in 1906 a preparation obtained from animals' lenses, and later withdrew his originally optimistic claims. Another similar method ("phacolysis") has been recommended in recent years but the alleged favorable results were not confirmed at Dimmer's clinic. The reason for the alleged success is the slowness of the process. In 95 per cent of the patients the beginning cataract remains almost stationary for years. No wonder then that arrest of the process in 95 per cent of the cases is claimed.

39: 321-348 (March 18) 1926

*Pathogenesis and Treatment of Myopia. L. Müller.—p. 321.
*Caronia's Cultures. J. Takaki.—p. 325.
*The Goiter Question. A. v. Mezö.—p. 326.

Rupture of the Bladder. A. Brenner.—p. 328.
Dispensary for Psychotherapy. H. Kogerer.—p. 330.
*Treatment of Obesity. D. Bayor.—p. 333.
The Vienna Laryngologic Society. H. Marschik.—p. 334. C'td.
Iridocyclitis and Tuberculosis. J. Meller.—p. 336.
Immunity and Allergy in Syphilis. H. Planner. Supplement, pp. 1-20.

Pathogenesis and Treatment of Myopia.—Müller started by investigating the reason why myopia starts usually after the ninth year and ends after the twenty-first. He found thirteen years ago by examination of 350 boys that the divergence of the visual axes is not a sequel of myopia. Quite the contrary, the myopes are recruited from the children with this divergence. He also concluded at that time that this is due to traction by the oblique muscle, not to a predominance of the external over the internal rectus muscle. He came to the conclusion that the elongation of the axis of the eye is not the primary lesion, but that it is produced by some processes connected with the growth of the orbit and the function of the oblique muscles of the eye. If the elastic band connecting the trochlea with the insertion of the obliquus superior, and serving also as a check band for the inferior muscle, is stretched by convergence of the eyeballs, the sclerotic is stretched and gets thinner exactly in the places typical for myopia. He severed the obliquus muscle in twenty-five eyes of twenty-one patients with grave myopia. The motor loss from the operation is negligible. The eyeball sinks about 3 mm. deeper. The myopia improved by 3-6 diopters. The changes in the choroid and retina retrogressed, the central visual acuity increased considerably. He has reason to assume that the operation may prevent detachment of the retina, and that it is essential for a cure. He intends to loosen the trochlear cartilage in children with beginning myopia. A retroposition of this kind would be a minimal intervention, and the possible benefit is great.

Caronia's Cultures.—Takaki was unable to confirm any of Caronia's claims. The alleged micro-organisms are probably a result of autolytic processes of the added pieces of organs. They gave nonspecific results when used as antigens in complement fixation tests with scarlet fever and measles convalescent serum. As to the protective value, he points to Hektoen's experiments which demonstrated the infectiosity of minimal amounts of blood taken from measles patients. The amount of original blood present in the cultures might be sufficient to immunize.

The Goiter Question.—Mezö grafted a piece of parenchymatous goiter from a boy with hyperthyroid symptoms under the oblique muscle of a girl suffering from dyspnea due to a large goiter. The goiter disappeared within four weeks.

Treatment of Obesity.—Bayor confirms Eppinger's results in treatment of obesity with novasurol. Short (seven) hours of sleep, exercises and dieting are also necessary. The salt intake should be restricted during the treatment.

Zentralblatt für Chirurgie, Leipzig

53: 577-640 (March 6) 1926

Total Extirpation of the Stomach. E. Schwarz.—p. 578.
Plastic Surgery of Fingers. E. Mühsam.—p. 585.
*Suprapubic Prostatectomy. D. Maluschew.—p. 589.
Kirschner's Suture of Bones. H. Schum.—p. 590.
Modification of Billroth II. S. Cukor.—p. 593.
Förster's Operation. O. Orth.—p. 598.
Material for Drains. S. Sofoteroff.—p. 601.
"Casts." H. Magnus.—p. 605.

Suprapubic Prostatectomy.—Maluschew makes a preliminary cystopexy together with vasectomy. Fourteen days later he performs the suprapubic prostatectomy with primary suture of the bladder.

53: 641-704 (March 13) 1926

*Prolapse of the Liver in Umbilical Hernia. K. Vogeler.—p. 642.
Wire Suture of Bone. M. Borchardt.—p. 647.
*The Fabella. H. Simon.—p. 650.
Traumatic Thrombosis. C. Prima.—p. 651.
Appendicitis Causing Incarcerated Hernia. J. Caillag.—p. 653.
Doubling the Aponeurosis. L. P. Mariantschik.—p. 656.
Herniotomy. G. M. Gurewitsch.—p. 661.

Prolapse of Liver in Umbilical Hernia.—Vogeler draws a sharp line between congenital hernias of the umbilical cord according to their contents. Only two survived out of ten children with prolapse of the liver, treated at Bier's clinic. The reposition of the liver increases the abdominal pressure and interferes with breathing and the action of the heart. He advises to resect or to ligate the part which cannot easily be pushed back into the abdominal cavity.

Fabella.—Simon declined to remove an alleged loose body in the knee which he diagnosed as a fabella; namely, a sesamoid fibrocartilage or calcified nodule in the lateral head of the gastrocnemius muscle.

Zentralblatt für Gynäkologie, Leipzig

50: 641-704 (March 13) 1926

Tuberculosis of Cervix. H. R. Schmidt.—p. 642.
*Vaginal Reaction in the New-Born. H. Kienlin.—p. 644.
Transverse Sagittal Suture Presentation. R. Brühl.—p. 646.
Forceps in Rural Practice. T. Johannsen.—p. 654.
Small Doses of Pituitary Extract. H. Hoeland.—p. 662.
Hemorrhage from Corpus Luteum. H. Hellendall.—p. 666.
Hormones and Lactation. H. Alexander.—p. 669.
*Blood Requirement of Ovarian Cystoma. C. H. Engelbrecht.—p. 671.
*Abortion in Uterus Septus. R. Falk.—p. 673.
Theory to Explain Menstruation. R. Grósz.—p. 676.
A Calculus in the Ovary. H. Jentter.—p. 678.
"Clips in Suture of Perineum." P. Silin.—p. 682.

Vaginal Reaction in the New-Born.—Kienlin found lactic acid in the vagina of new-born girls before any bacteria had time to develop. He concludes that it originates probably by fermentative action of the tissue itself.

Blood Requirement of Ovarian Cystoma.—Engelbrecht removed a carcinomatous cystoma, weighing 14 pounds, which had rapidly grown in four weeks. The fluid expressed from it contained enough iron to correspond to 5,600 cc. of blood.

Abortion in Uterus Septus.—Falk made with apparent success an artificial abortion in the second month of pregnancy in a woman with grave heart disease. She returned three months later with the uterus corresponding to the fifth month of pregnancy. This was due to another ovum situated in the other half of a double uterus with single cervix.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 741-832 (Feb. 20) 1926

*The Netherlands Pharmacopeia. H. Pinkhof.—p. 742.
*Radium Treatment of Cancer of the Esophagus. W. F. Wassink.—p. 746.
*Swine Erysipelas Pathogenic for Man. C. Postma.—p. 754.
*Air Embolism with Criminal Abortion. J. P. L. Hulst.—p. 759.
A Spontaneous Hematoma in Abdominal Wall. P. Broertjes.—p. 768.

The Netherlands Pharmacopeia.—The fifth edition is now in press. Among the sixty-three new articles listed are glycerol suppositories, folia colei, crystallized strophanthin, and cinchophen. Among the same number dropped are croton oil and unguentum hydrargyri fortius. Pinkhof lists a number which should be dropped, and protests against the dropping of malaga wine. On account of the variable composition or proprietary ownership, ichthyol and arsphenamine are omitted, and the only organ extract given is thyroid.

Radium Treatment of Cancer of the Esophagus.—Wassink remarks that we can always be certain that conditions are worse than they appear to be in cancer of the esophagus. In nineteen of his forty-one cases the outlook seemed to be favorable, but all have died since except two; one of these, a man aged 67, is in excellent health two years and a half since the radium treatment. He had noted the first symptoms about six months before treatment was begun. Even merely palliative radium treatment long postpones a gastric fistula.

Swine Erysipelas in Man.—Postma cites Praussnitz' recent case in which a child, aged 10, died from chronic septicemia which responded to tests for swine erysipelas. This disease occurs in other domestic animals and in poultry, and it is possible that certain cases of chronic arthritis in man may be due to the same bacillus. It should be sought during the acute phase of joint disease. Edel urges search for it in cases of enteritis during an epizootic. In 164 cases of swine erysipelas in a light form, Postma found the bacilli in the meat in 66 per cent, but they were all killed by heat; pieces of meat weighing 800-1,800 Gm., and 5-15 cm. thick, were sterilized by heat applied for an hour, even when the central temperature had not reached 90 C.

Air Embolism with Criminal Abortion.—Hulst relates that in one of the two cases he describes death occurred instantaneously after the first symptoms of air embolism, but eighteen hours had elapsed since the intra-uterine injection of a warm fluid, responsible for it. No air was found in the fetal membranes but there was air between the uterus wall and the ovum (twenty-three weeks) which had been partially detached. In the other case, the broken tip of the syringe cannula had pierced the right wall of the vagina, and air had been injected directly into some injured blood vessel. Death was instantaneous, and air was found in the heart.

1: 833-932 (Feb. 27) 1926
The Medical School in Java. G. van Rijnberk.—p. 834.
*Psoriasis After Neo-Arsphenamine Treatment. Van der Hoog.—p. 838.
*Hour-Glass Stomach. J. J. Halbertsma, Jr.—p. 845.
Embryologic Study of Form Properties. S. T. Bok.—p. 850.
*Safe Cans for Food. E. C. van Leersum.—p. 859.
Multiple Pathologic Conditions in a New-Born Infant. Van Lohuizen. —p. 865.
Pluri-Orificial Erosive Ectodermosis in a Woman. J. J. C. Schreuder. —p. 874.
International Cooperation in Medicine. F. H. Quix.—p. 898.

Psoriasis After Neo-Arsphenamine Treatment.—The young woman developed an arsenical erythroderma after a total of 5 Gm. of neo-arsphenamine had been injected, and psoriasis developed on this basis. After acute bilateral parotitis about a month later, the psoriasis subsided in a few weeks. It had responded to all the tests for true psoriasis.

Hour-Glass Stomach.—The woman of 51 had had more or less stomach disturbances for twenty years, with two temporarily successful courses of medical treatment for gastric ulcer. The pains finally became unendurable, with a hemorrhagic tendency, and the laparotomy revealed an hour-glass stomach with an ulcer that had invaded the pancreas, another ulcer at the pylorus, and a duodenal ulcer. After the extensive resection required, the woman gained 12.5 Kg. in weight, and has been free from all stomach disturbances during the eight months to date.

Canned Goods.—Van Leersum describes the exhaustive tests applied to a consignment of a canned food, a hash, including onions and potatoes, put up six years before. His expert testimony was to the effect that this canned food was suitable for the table. In the course of his research he became convinced that the indispensable element for conservation of foods in cans is to exhaust all the air from the can as it is sealed. The oxygen is responsible for any corrosion that occurs.

Acta Chirurgica Scandinavica, Stockholm

60: 1-192 (March 10) 1926
*Ruptures of Tendons. E. J. Närvi.—p. 1.
Treatment of Appendicitis. P. Clairmont and M. Meyer.—p. 55.
Intrathoracic Goiter. O. Aleman.—p. 135.
*Gastric Disturbances in Tetany. F. Langenskiöld.—p. 143.
Intradural Tumors. E. Landelius.—p. 180.

Regeneration of Tendon After Suture.—Närvi found in his experiments that the ends of the severed tendon remain passive. The granulation tissue grows along the sutures and changes later into a hard tendon-like tissue. It is essential to preserve the tendon sheath to facilitate the gliding movements. Immobilization is irrational.

Gastric Disturbances with Tetany.—Langenskiöld reports on six cases of tetany in young and middle aged women with a predominance of gastric symptoms. Attacks of sharp pains beginning during the meal and vomiting were the usual features, which he attributes to intestinal spasms. Calcium had a good effect.

Hygiea, Stockholm

88: 65-112 (Jan. 31) 1926
*Larynx Test for Tubercle Bacilli. H. Silwer and W. Rasch.—p. 65.
*Training in Medical Radiology. G. Forssell.—p. 73. C'cn.

The Larynx Test for Tubercle Bacilli.—Silwer and Rasch report that they were able to demonstrate tubercle bacilli in the secretion taken directly from the larynx in 17.4 per cent of 219 patients whose sputum was free from tubercle bacilli, or from whom no sputum was obtainable.

Training in Medical Radiology.—This was the opening address at the recent annual meeting of the radiologists of the Northland. Forssell in conclusion lists the opportunities throughout the world for instruction in this line.

88: 145-192 (Feb. 28) 1926
Neo-Platonism and Medicine. E. Nachmanson.—p. 145.
*Surgical Treatment of Splenomegaly. A. Troell.—p. 157. Begun, p. 116.

Operative Treatment of Splenomegaly.—Troell states that the effect of splenectomy was satisfactory, both at the time and later, in most of his fourteen cases of Banti's disease, hemolytic jaundice or essential thrombopenia. Even Banti cases with urobilinuria, ascites and histologic changes in the liver may retrogress to clinical recovery. The prognosis does not depend on the stage of the process so much as on the grave anemia, even in recent cases; the outlook is better when the symptoms are referable more to the abdominal organs than to the blood picture. One of his eight Banti patients recovered after ligation of some of the vessels of the spleen, without removing the latter. This intervention should be considered when it is inadvisable to reduce the defensive forces as splenectomy might contribute to lower the resisting powers. One patient died during an attack of influenza a year after the splenectomy for Banti's disease, and, besides red bone marrow in the femur, all the cervical and abdominal glands were found enlarged. In the Banti cases he often found a history of jaundice and gastro-intestinal disturbances far in the past; occasionally, the symptoms had developed first during a pregnancy. One of the two patients with pernicious anemia was treated by ligation of vessels, but this did not check the disease.

Ugeskrift for Læger, Copenhagen

88: 149-174 (Feb. 18) 1926
*Treatment of Diphtheria, 1921-1925. H. Heckscher.—p. 149. C'cn, p. 187.
Cancer of the Uterus. H. Abrahamsen.—p. 159.
Pergola's Culture Medium for Diphtheria Bacilli. Nyfeldt.—p. 165.

Treatment of Diphtheria.—Heckscher's article is the third report on diphtheria from the Blegdamshospital in the last twenty-eight years. In the last nearly five years the mortality from diphtheria was 1.2 per cent of 4,819 cases. Circulatory insufficiency—diphtheria shock—was responsible for the fatality in all but five of the sixty-six deaths; paralysis of the respiratory muscles in four cases, and fatal toxic action on the liver and kidneys in one case. The rule is as large doses of antitoxin as possible, as early as possible, absolute quiet, camphor subcutaneously and caffein by the mouth. Further study of diphtheria shock may disclose means to act on the capillaries, arterioles or heart musculature, and show whether epinephrine might not help. To prevent serum sickness, injection of nonspecific proteins seems promising. Better results can be hoped for when the antitoxin is made more potent in smaller compass, so that larger doses can be given.

88: 175-208 (Feb. 25) 1926
*Results of Sanocrysin Treatment. K. Secher.—p. 175.
*Biologic Analysis of Digitalis Substances. Marie Krogh.—p. 183.
Small Doses of Metal Salts in Therapeutics. N. Lunde.—p. 191.
Glaucoma and Blindness in Iceland. P. Børresen.—p. 194.

Sanocrysin Treatment.—Secher reports 106 patients with various forms of tuberculosis free from all signs of active tuberculosis when dismissed from treatment; thirty-five were merely improved, and forty-six not benefited.

Biologic Analysis of the Active Principles of Digitalis.—Some of these substances are soluble in chloroform, others in alcohol, and the question is whether there is a similar difference between their biologic action. Krogh tabulates the findings in mice and frogs which have demonstrated a pronounced qualitative difference. The gitalin glucoside displays greater potency in mice. With a solution of gitalin and one of digitalin, both of which display the same potency in the frog heart, the gitalin solution has a threefold stronger action on the mouse heart. Similar qualitative differences are noted with the less readily soluble element digitoxin. The research reported is a link in the chain of the international standardization research now under way.